

**Appendix M - Response to Public Comments, Public
Hearing on May 8, 2002**

1. Comment Code: 303(d) Listing

Agency ID: County of San Diego

Commenter: Gary Erbeck

Comment:

As a matter of law, TMDLs must be promulgated after and must be based on impairment listings. Peer reviewers have noted and the Regional Board has acknowledged that the current impairment listing for Rainbow Creek no longer has a basis in fact. Moreover, it is clear that the Regional Board is not proposing a TMDL to address the eutrophication-based impairment listing for Rainbow Creek, but are instead proposing a TMDL that anticipates the modifications to the Rainbow Creek impairment listing that are now pending at the State Water Resources Control Board. This sequencing is backwards, legally and scientifically. It is an abuse of the public participation processes the law mandates for 303(d) listings and for TMDLs. No TMDL for Rainbow Creek should go forward until a revised impairment listing for Rainbow Creek is in place.

Response:

The 2002 303(d) List was adopted by the State Water Resources Control Board on February 4, 2003 and was approved by the USEPA on June 6, 2003. In the updated list, the impairment for Rainbow Creek was revised from "eutrophic" to "nitrogen and phosphorus".

The fact remains that even with the nutrient reduction observed in Rainbow Creek, water quality standards are still being exceeded and action is needed to bring the water quality to acceptable levels that support all beneficial uses.

The stream monitoring data collected from Rainbow Creek by the Regional Board from January 2000 to October 2000 indicates that:

1. Water quality standards for nitrogen are still not being met.
2. The exceedence of water quality standards for TN generally increases the farther downstream the sampling locations are in the watershed.
3. Total P also exceeds water quality standards throughout Rainbow and appears at the highest concentrations downstream from Station 2.
4. Nitrogen and phosphorus results for 2000 are higher than levels reported for the 1996-1998 Mission Resource Conservation District (MCRD) monitoring.

2. Comment Code: 303(d) Listing

Agency ID: Hines Nurseries

Commenter: Bud Summers

Comment:

The TMDL in issue is entitled a “Nutrient TMDL” for Rainbow Creek. Yet, language in the TMDL Staff Report dated March 22, 2002 shows that Rainbow Creek is presently only listed on the Clean Water Act’s Section 303(d) list for “eutrophication.” There is no present listing of Rainbow Creek for nutrients. Hines is aware that the issue of whether Rainbow Creek should be listed as being impaired for nutrients is being addressed by State Board staff, in its review of the 2002 303(d) list. However, as of April 23, 2002 Rainbow Creek has not been listed as an impaired water body because of nutrients.

Response:

The Regional Board’s consideration of Nutrient TMDLs for Rainbow Creek in May 2002 was entirely appropriate even though Rainbow Creek waters were not at that time explicitly listed as impaired due to nitrogen and phosphorus concentrations. Clean Water Act (CWA) § 303(d)(1)(A) requires each state to identify the waters within its jurisdiction that are not attaining water quality standards. The result of that process is commonly known as the CWA § 303(d) list. The federal regulations additionally require the 303(d) list to include an identification of the pollutants causing or expected to cause violations of standards¹.

For the waters on the CWA § 303(d) list, CWA § 303(d) (1)(C), requires the state to develop TMDLs for the pollutants that are impairing those waters. In many instances waters on the CWA § 303(d) list are not identified as impaired by a specific pollutant, but by conditions that are caused in whole or in part by pollutants. Examples of these stressors include accelerated eutrophication (typically associated with excessive nitrogen and phosphorus concentrations), toxicity (miscellaneous toxic constituents), and temperature (thermal discharges and sediment). CWA § 303(d)(1)(A) does not prohibit identifying waters as impaired by such conditions, and the United States Environmental Protection Agency (USEPA) has approved this approach, for example, by approving the State of California’s 1998 and 2002 303(d) lists. Such listings, however, do not impact the state’s obligation under CWA § 303(d) (1)(C) to develop TMDLs for the pollutants impairing those waters. Accordingly, where waters are listed as impaired for conditions commonly associated with pollutants, the Regional Board must identify the pollutants underlying or contributing to the conditions, and either establish TMDLs for those pollutants, or establish TMDLs that otherwise correct the conditions leading to the impairment.

In any event the latest listing of impaired waters in the CWA § 303(d) List for 2002 renders the issue moot. The 2002 303(d) List was adopted by the State Water Resources Control Board on February 4, 2003 and was approved by the USEPA on June 6, 2003. In

¹ See 40 C.F.R. § 130.7(b)(1)(4)

the updated list, the impairment for Rainbow Creek was revised from "eutrophic" to "nitrogen and phosphorus".

3. Comment Code: 303(d) Listing

Agency ID: San Diego County Farm Bureau

Commenter: Eric Larson

Comment:

Monitoring data clearly show significant decreases in nutrient levels following the 1996 303(d) listing. This improvement calls into question the need to make Rainbow Creek a priority TMDL. Because a 96% reduction was achieved through the program of education administered by the Mission Resource Conservation District, we question why the Regional Board did not pursue a similar approach before choosing to pursue a TMDL.

Response:

In 1996 Rainbow Creek was listed as impaired for Clean Water Act's Section 303(d) list for "eutrophication." . The current CWA § 303(d) List for 2002 describes Rainbow Creek's pollutant impairment as "nitrogen and phosphorus". The Regional Board is obligated under CWA § 303(d) (1)(C) to develop TMDLs for pollutants impairing Rainbow Creek because Rainbow Creek is an impaired waterbody listed on the CWA § 303(d) list.

The fact remains that even with the nutrient reduction observed in Rainbow Creek, nutrient water quality standards are still being exceeded and action is needed to bring the water quality to acceptable levels that support all beneficial uses.

The stream monitoring data collected from Rainbow Creek by the Regional Board from January 2000 to October 2000 indicates that:

1. Water quality standards for nitrogen are still not being met.
2. The exceedence of water quality standards for total nitrogen generally increases the farther downstream the sampling locations are in the watershed.
3. Total phosphorus also exceeds water quality standards throughout Rainbow Creek and appears at the highest concentrations downstream from Station 2.
4. Nitrogen and phosphorus results for 2000 are higher than levels reported for the 1996-1998 Mission Resource Conservation District (MCRD) monitoring.

The Regional Board recognizes and appreciates the reductions accomplished by the work of the MRCD (through their public outreach efforts and their work to cease the

downstream discharge from the nursery formerly known as Rainbow-Flynn Nursery). Encouragement of voluntary implementation of management practices through a public outreach campaign is the ideal place to begin the implementation of the TMDLs. The implementation plan includes the public outreach program pioneered in the watershed by the MRCD. However, that success is not a reason to delay development of the TMDLs, which are needed to establish and allocate pollutant loads that will allow attainment of water quality standards.

4. Comment Code: Beneficial Uses

Agency ID: San Diego County Farm Bureau

Commenter: Eric Larson

Comment:

It appears that the arroyo chubs need algae. If the implementation of these TMDLs have a detrimental effect on the chubs, there is a risk of environmental law conflicts.

Response:

The Regional Board disagrees with this statement. As stated in the Technical Report, the arroyo chub is an omnivorous grazer and feeds on aquatic plants, algae, aquatic insects, and small crustaceans. It is thought that most of the nutrition derived from the ingestion of plant material comes from the invertebrates associated with the algae or plant material. Thus, the chubs use algae as one substrate to feed upon. This TMDL will reduce the nutrient rich induced algae growth in the water but will not limit other naturally occurring aquatic plants from growing or plant material from entering into the creek.

Preservation of suitable habitat is probably the most important factor in maintaining arroyo chub populations in Rainbow Creek. The chub prefers slow moving water with sand or mud bottoms and will move into large pools for breeding. If algae growth is not controlled, it is possible the chubs may lose their ideal habitat by being displaced by algal mats and reduced dissolved oxygen.

5. Comment Code: Beneficial Uses

Agency ID: San Diego County Farm Bureau

Commenter: Eric Larson

Comment:

We are unclear as to whether the listed beneficial uses are specifically designated to Rainbow Creek or are they designated by the Regional Board pursuant to the tributary rule because the Santa Margarita River is so designated. If designated pursuant to the tributary rule, we would ask for evidence as to the appropriateness of the listed beneficial uses within the watershed.

Response:

The beneficial uses of Rainbow Creek are specifically designated in Chapter 2, Table 2-2 of the Regional Board's Basin Plan. The eight designated beneficial uses are: MUN, AGR, IND, REC1, REC2, WARM, COLD, and WILD. The Santa Margarita River has the same beneficial uses with the addition of RARE. The appropriateness of the beneficial uses designated for Rainbow Creek is not a relevant issue in the Regional Board's deliberations on adopting the Rainbow Creek TMDL Basin Plan amendment.

The appropriateness of beneficial use designations for Rainbow Creek is an issue that should be raised in the context of the Regional Board's triennial review of Basin Plan water quality standards. The Water Quality Control Plan for the San Diego Basin (Basin Plan) designates beneficial uses for water bodies in the San Diego Region, and establishes water quality objectives and implementation plans to protect those beneficial uses. The Regional Board reviews the appropriateness of beneficial uses, water quality objectives and implementation plans designated in the Basin Plan every three years pursuant to federal and state law. The most recent 2004 Basin Plan Triennial Review was completed in June 2004. Based on that review no changes in the beneficial use designations for Rainbow Creek are currently being considered.

6. Comment Code: Data Gaps

Agency ID: County of San Diego

Commenter: Gary Erbeck

Comment:

Cooperate to practice good science. The Regional Board must progress beyond invocations of the Basin Plan in ways that peer reviewers can characterize as scientifically "absolutely insupportable, bordering on the ridiculous," to solid science. Impairments must be verified and localized. The Regional Board must determine how nitrogen and phosphorus interact to stimulate algal growth in specific parts of the creek. TMDL implementation must be focused on these specific problems. The County is prepared to participate in this study process.

Response:

The Regional Board has relied on, interpreted and used the 0.1 mg/l goal for phosphorus stated in the Biostimulatory Substances water quality objective as a phosphorus water quality objective for approximately 30 years since its original incorporation in the Baisn Plan in 1975. Similarly the Regional Board's use of the N:P ratio of 10:1 in the Biostimulatory Substances water quality objective to determine the applicable nitrogen water quality objective of 1.0 mg/l is well established. The Regional Board most recently reaffirmed its use of the the Biostimulatory Substances water quality objective to control nitrogen and phosphorus levels in San Diego Region inland surface waters by readopting it in 1994 as part of a major revamping of the Baisn Plan.

The Biostimulatory Substances water quality objective requires the use of 0.1 mg/l phosphorus and 1.0 mg/l nitrogen as water quality objectives unless scientific studies show that alternative site specific water quality objectives (SSOs) for nitrogen and phosphorus are appropriate for Rainbow Creek. The SSOs would need to (1) be based on sound scientific rationale; (2) protect the designated beneficial uses of Rainbow Creek waters; and (3) be adopted by the Regional Board in a Basin Plan amendment. Dischargers or other interested parties would need to fund and initiate the scientific studies to develop the SSO. It is possible the studies could reveal the need for more stringent nutrient water quality objectives.

There is no effort currently underway or planned by interested persons to fund the scientific studies needed to develop SSOs for nutrients in Rainbow Creek. Even in the event that scientific studies were initiated and SSOs for nutrients were developed and adopted by the Regional Board, it would likely not obviate the need for a TMDL. Accordingly, the appropriate strategy for addressing the nutrient water quality problem in Rainbow Creek is for the Regional Board to proceed with adoption of the proposed TMDL Basin Plan amendment at this time. If SSOs for nutrients are developed in the future and adopted by the Regional Board, this TMDL Basin Plan Amendment would be modified accordingly. If interested parties are willing to fund and oversee development of scientific studies to investigate SSOs, the most effective and expeditious means to improve water quality would be to conduct these studies concurrent with actions necessary to achieve compliance with the current TMDL.

Development of new numeric nutrient criteria are currently underway in California by the USEPA Region IX Regional Technical Advisory Group. USEPA's recommended criteria for the subcoregion that includes Rainbow Creek are 0.5 mg total N/L and 0.03 mg total P/L, which are significantly lower than the Basin Plan objectives. Unless USEPA formally adopts these nutrient criteria or the Regional Board adopts alternative nutrient criteria, the biostimulatory substances water quality objective currently in the Basin Plan is the applicable water quality objective the TMDL should be based on..

Research into the appropriateness of numeric goals of 1.0 mg total N/L and 0.1 mg total P/L indicates that these values are consistent with published scientific studies. Dodds et al. (1998), using the cumulative frequency distributions of nutrient data from more than

1000 temperate streams primarily in North America and New Zealand, suggest total nitrogen and total phosphorus levels between 0.7 to 1.5 mg N/L and 0.02 to 0.07 mg/PL, respectively, define streams that are mesotrophic. Eutrophic is a trophic state that has an abundance of nutrients and plant growth, and mesotrophic is a trophic state that has moderate concentrations of nutrients and plant growth.

7. Comment Code: Data Gaps

Agency ID: Hines Nurseries

Commenter: Bud Summers

Comment:

In short, the use of a “modeled” TMDL without proper technical conditions and sufficient monitoring data has resulted in the development of a TMDL that is unsupported and unobtainable.²

²Another example of the data gap in developing the TMDL is the lack of any flow analysis to convert the concentrations detected from monitoring into load allocations for the nutrients in issue. The monitoring data which has identified concentrations in samples at various points along the Creek, is only relevant if the total flow or quantity of water that would contain such concentrations is also determined. Without this information, insufficient data exists to develop a “load” allocation for the TMDL.

Response:

The Regional Board has modified the TMDL to include 8 years worth of site-specific flow data collected by USGS and water quality data collected by Regional Board staff in 2000. Furthermore, water quality information from minimally impacted streams within the region has been incorporated into the document to establish background nutrient conditions (see Section 4.0 and Appendix D of the Technical Report). The Regional Board has adequate analytical information and has used accepted calculation methods to estimate the nutrient loading to Rainbow Creek and to develop a TMDL.

8. Comment Code: Data Gaps

Agency ID: San Diego County Farm Bureau

Commenter: Eric Larson

Comment:

We have found that this Staff Report is overburdened with data gaps. In many instances data is incomplete, leading to numerous comments about re-evaluating the TMDLs, adjusting allocations, and the need for better data. These data gaps create a situation where the Regional Board is considering TMDLs that set an unachievable allocation of zero nutrient loads and explains it away by stating better data will be collected at a future date. Successful implementation of any plan needing the cooperation of stakeholders must show that the goals and remedies are reasonable, achievable, and based on reliable information.

Response:

The Regional Board has extensively revamped the Rainbow Creek TMDL to improve the scientific basis and validity of the wasteload and load allocations. The revised Rainbow Creek TMDL report now includes eight years of site-specific flow data to calculate the TMDLs, and City of San Diego water quality data from a number of minimally impacted streams within the County to calculate the background load. (See Section 4, and Appendix D and E.).

The TMDL implementation action plan is designed to include evaluations by the Regional Board to determine if the TMDLs, allocations, or implementation strategy need to be changed or modified. The Regional Board has structured an adaptive implementation action plan in the revised Rainbow Creek TMDL that simultaneously makes progress towards achieving nutrient water quality objectives while relying on monitoring data to reduce uncertainty and fill data gaps as time progresses. This monitoring data can be used to revise and improve the initial TMDL forecast over time. This type of approach will help ensure that the Rainbow Creek TMDL program is not halted because of a lack of data and information, but rather progresses while better data are collected to verify or refine assumptions, resolve uncertainties, and improve the scientific foundation of the TMDL.

9. Comment Code: Data Gaps

Agency ID: County of San Diego

Commenter: Gary Erbeck

Comment:

During the early stages of implementing an interim TMDL, appropriate studies could be pursued on a cooperative and shared-cost basis to determine whether and if Rainbow Creek is actually impaired for biostimulatory substances based on the narrative standard in the Basin Plan. These studies could also determine the actual levels of nitrogen and phosphorus that are limiting for biostimulatory effects in the potentially impaired portions of this creek. The studies could confirm or refine estimates of natural nitrogen

and phosphorus loadings to Rainbow Creek, and could determine the characteristics the creek would have if only natural loadings entered the creek.

During this period the County and the RWQCB could also cooperate to pursue the best available opportunities to reduce incremental man-made loadings of nitrogen and phosphorus to Rainbow Creek. This could include securing all appropriate additional reductions at commercial nurseries.

Response:

The federal Clean Water Act requires that TMDLs be developed to attain water quality standards through wasteload and load reduction actions taken during implementation. The Clean Water Act precludes the Regional Board from adopting an “interim TMDL” that does not require sufficient nutrient wasteload and load reduction actions to attain the water quality objectives.

The Regional Board acknowledges that the technical basis of the Rainbow Creek TMDL is characterized by data gaps and uncertainties. Scientific uncertainty is a reality within all water quality programs, including the TMDL program, and it cannot be entirely eliminated. The TMDL program must move forward in the face of these uncertainties if progress in establishing TMDLs and attaining water quality objectives in impaired waters is to be made.

In accordance with this approach the Regional Board has structured an adaptive implementation action plan in the revised Rainbow Creek TMDL that simultaneously makes progress towards achieving nutrient water quality objectives while relying on monitoring data to reduce uncertainty and fill data gaps as time progresses. This monitoring data can be used to revise and improve the initial TMDL forecast over time. This type of approach will help ensure that the Rainbow Creek TMDL program is not halted because of a lack of data and information, but rather progresses while better data are collected to verify or refine assumptions, resolve uncertainties, and improve the scientific foundation of the TMDL.

The Regional Board appreciates the County's willingness to work cooperatively. Pursuit of opportunities to reduce incremental man-made loading of total nitrogen and total phosphorus to Rainbow Creek, including all appropriate nutrient load reductions at commercial nurseries, is consistent with the proposed Implementation Plan.

10. Comment Code: Data Gaps

Agency ID: Hines Nurseries

Commenter: Bud Summers

Comment:

One significant data gap recognized in the Staff Report itself is the lack of data on releases from septic tank disposal systems in the area. In fact, the Staff Report identifies these septic systems as an area requiring further study. Releases from septic tanks must be evaluated to determine the amount of nutrients released to groundwater from such disposal systems, and furthermore, to then determine the impact of groundwater on surface waters at various locations within Rainbow Creek. Septic tank releases may play a significant role in the release of nutrients and possibly other contaminants to Rainbow Creek. The Staff Report identifies and recognizes the need for a groundwater investigation to, at a minimum, “identify the contribution of groundwater discharge to surface flow,” as well as a number of other items worthy of groundwater investigation.

Response:

The Regional Board agrees that a groundwater and septic tank investigation are important components to assessing the nutrient loading to Rainbow Creek.

11. Comment Code: Data Gaps

Agency ID: Hines Nurseries

Commenter: Bud Summers

Comment:

Throughout the Staff Report, there are references to data gaps and the lack of data necessary to develop numeric objectives. In addition, there are various statements that the data collected during implementation will be used to fill such data gaps and to provide additional information needed to be used to determine if the TMDL and load allocations should thereafter be revised or if localized TMDLs are needed. For example, on page 22 the draft Staff Report dated March 22, 2002 provides that: “The total nitrogen and total phosphorus load capacities will be adjusted as necessary once additional data have been obtained from the Implementation Plan and Monitoring Strategy.” As a result of the lack of data at this juncture, the draft TMDLs established for nutrients for Rainbow Creek are merely modeled using “simple models and assumptions. TMDLs based on “the lack of data” are therefore, not “technically defensible TMDLs” based on the availability of analytical methods, modeling techniques, and a database (See 43 Fed. Reg. 60662).

Response:

The Regional Board acknowledges that the technical basis of the Rainbow Creek TMDL is characterized by data gaps and uncertainties. Scientific uncertainty is a reality within all water quality programs, including the TMDL program, and it cannot be entirely

eliminated. However the TMDL program must move forward in the face of these uncertainties if progress in establishing TMDLs and attaining water quality objectives in impaired waters is to be made.

The Regional Board has revised the TMDL based on the comments received on the earlier 2002 proposed TMDL document. The Regional Board has extensively revamped the Rainbow Creek TMDL to improve the scientific basis and validity of the wasteload and load allocations. In establishing the nutrient TMDLs and load allocations, the Regional Board has incorporated the following sources of data and information into the Technical Report:

- Eight years of site-specific USGS stream flow data.
- Site-specific water quality data collected by the Regional Board in 2000.
- Published nutrient export coefficients.
- City of San Diego water quality data from minimally impacted streams within the County.

12. Comment Code: Economic Considerations

Agency ID: Hines Nurseries

Commenter: Bud Summers

Comment:

The economic consideration section of the Staff Report includes a Section discussing BMPs and the incursion of other implementation costs for landowners and land uses, including for commercial nurseries. The estimated best management practice costs identified in this Section, although acknowledging Hines' new recycling system in the narrative in Section 11.2, do not incorporate into the costs described in Table 11-5, the \$1.5 to \$2 million recycling system that Hines Nurseries has voluntarily committed to undertake to further reduce the amount of runoff entering Rainbow Creek. Nor does the discussion on economics in this Section scale up these costs to the commercial nursery industry as a whole.

Response:

The Economic Considerations section (Section 12) has been revised and expanded to address this comment and the comments received at the May 8, 2002 Regional Board hearing. Specifically, text and tables have been added that outline a range of likely best management practices (BMPs) and management practices (MPs) with cost and efficiency estimates of each BMP / MP based on literature sources.

The Regional Board appreciates the measures Hine Nursery is undertaking to reduce nutrient discharges to Rainbow Creek. A brief discussion of the Hines Nursery operation is presented in Section 2.2 of the Technical Report. However, the Hine Nursery's water recycling system is not considered a typical or likely BMP / MP for commercial nurseries. The Hines Nursery system altered the streambed and discharges irrigation water directly to Rainbow Creek. The proposed new recycling system is an effort to remove their current irrigation recycling system and earthen dam from the streambed. It is unlikely that others will incur similar expenses.

13. Comment Code: Economic Considerations

Agency ID: San Diego County Farm Bureau

Commenter: Eric Larson

Comment:

The Economic Considerations section fails to adequately address the costs that may be incurred by agricultural operations to implement Best Management Practices (BMPs). For example, Table 11-5 of the Staff Report dated March 22, 2002, states that BMPs may offer costs savings as a result of lower fertilizer and water usage is contrary to the fact that the Hines Nursery investment may be as much as \$2 million.

Response:

The Economic Considerations section (now Section 12.0) has been revised and expanded to address this comment and the comments received at the May 8, 2002 Regional Board hearing. Specifically, text and tables have been added that outline a range of likely MPs, provide cost estimates, and efficiency of each MP based on literature sources.

The Regional Board appreciates the measures Hine Nursery is undertaking to reduce nutrient discharges to Rainbow Creek. A brief discussion of Hines Nursery operation is presented in Section 2.2 of the Technical Report. However, Hines Nursery's water recycling system is not considered a typical or likely MP for commercial nurseries. The current Hines Nursery system altered the streambed and discharged irrigation water directly to Rainbow Creek. The new recycling system is an effort to remove their current irrigation recycling system and earthen dam from the streambed.

14. Comment Code: Economic Considerations

Agency ID: San Diego County Farm Bureau

Commenter: Eric Larson

Comment:

When the document discusses the cost of BMPs, it does not consider whether the BMPs will actually help to meet the load allocations given. There must be some evaluation of the suggested BMPs and their effectiveness.

Response:

It is expected that the MPs used in Rainbow Creek will fall into three general categories: Irrigation MPs, Nutrient Reduction MPs, and Run off/Erosion Control management MPs. The estimated effectiveness and cost of each MP are presented in Appendix H of the Technical Report. Flexibility has been intentionally incorporated into the implementation plan to accommodate modifications and changes to the MPs as new water quality monitoring data and information on the effectiveness of the MPs becomes available during implementation.

15. Comment Code: Economic Considerations

Agency ID: County of San Diego

Commenter: Gary Erbeck

Comment:

Share study costs equitably, including a substantial State contribution. The County is not a significant discharger in this watershed, and is not the principle governmental agency with responsibility for promulgating and implementing TMDLs. The studies the Regional Board is seeking would provide basic data and science that should underlie any TMDL. This work should be the Regional Board's job. The County is willing to contribute to needed study efforts, but will not bear the entire cost of needed studies, plans and monitoring. The Regional Board or state, and major dischargers in the watershed, must also provide significant funding. The County's obligations to do work pursuant to CWC Section 13225(c) must be contingent on receipt of funds from those sources.

Response:

The State Water Resources Control Board administers the awarding of grants funded from Proposition 13, Proposition 50, Clean Water Act 319(h) and other federal appropriations to projects that can result in measurable improvements in water quality, watershed condition, and/or capacity for effective watershed management. Many of

these grant fund programs have specific set-asides for expenditures in the areas of watershed management and TMDL implementation for NPS pollution.

The Regional Board understands that the County of San Diego has recently been awarded a Federal Clean Water Act Section 319(h) Nonpoint Source Implementation Grant Program in the amount of \$321,436 for the development of a Nutrient Reduction Management Plan for the Rainbow Creek watershed. The Regional Board will continue to recommend that the State Board assign a high priority to awarding grant funding for projects to implement the Rainbow Creek nutrient TMDLs. Special emphasis for grant funding will be given to projects that can achieve quantifiable nutrient load reductions consistent with the specific nutrient TMDL load allocations.

In conjunction with an MAA or MOU with the County of San Diego describing an adequate NPS pollution control implementation program, the Regional Board will adopt individual or general waivers or waste discharge requirements (WDRs) for NPS discharges in the Rainbow Creek watershed. The waivers or WDRs will require NPS dischargers to either participate in the third party NPS program or, alternatively, submit individual pollution prevention plans that detail how they will comply with the waivers and WDRs. Alternatively, the Regional Board may adopt a discharge prohibition, which includes exceptions for those dischargers who participate in the County's non point source pollution control implementation.

CWC §13225 provides authority for the Regional Board to enter into a Management Agency Agreement (MAA) with the County of San Diego to encourage development of appropriate planning or regulatory programs to control nonpoint source pollution. CWC §13225 also provides authority for the Regional Board to require local agencies such as the County of San Diego to submit technical reports on water quality control, even though those entities may not be waste dischargers. Local agencies can be required to investigate the scope, causes, and sources of nonpoint source pollution, and potential practices or control measures to prevent it. The only restriction is that the burden of preparing the reports bear a reasonable relationship to the need for and the benefits to be obtained from the reports. The Regional Board will provide a rationale relating the need for reports to the projected cost of the reports in CWC §13225 Orders it issues to the County requesting the submission of technical reports.

16. Comment Code: Economic Considerations

Agency ID: County of San Diego

Commenter: Gary Erbeck

Comment:

Evaluate alternatives to “proportional” load allocations. The Regional Board has proposed to reduce allowable loads from significant categories of sources in proportion to

baseline loads. That approach does not take into account the feasibility, costs, or cost-effectiveness of further controls, and does not address fairness issues. The resulting load allocation (LA) for septic tank disposal systems is infeasible, as discussed in this letter. The resulting allocation for other categories of sources may not take advantage of opportunities to secure further reductions in loadings at modest cost.

Response:

The TMDL has been modified from using proportional load allocations to equal load allocations with the exception of Parks and Urban areas. See Table 6-1 in the Technical Report for the new allocations. Appendix F provides additional information about the rationale that was used in assigning load allocations. The Regional Board will consider any specific information submitted by the public that address the concerns of fairness, feasibility, costs, and cost effectiveness.

The Regional Board recognizes that significant nutrient reductions in Rainbow Creek will be a long-term project. As Management Practices (MPs) are considered by dischargers for nutrient reduction, it is expected that their effectiveness and cost will be taken into consideration.

17. Comment Code: Implementation Language

Agency ID: County of San Diego

Commenter: Gary Erbeck

Comment:

Give the County more flexibility regarding study designs, monitoring, and reporting. The County remains willing to coordinate and to contribute to the cost of the studies and monitoring that are needed in this watershed.⁷ However, read together, the draft Basin Plan amendment and draft Staff Report set very specific mandatory parameters for this work. Those specifications would lock in future research for a four-year period, and would require the County (or the County and others) to spend more than \$1.0 million for studies, monitoring, and reports. Much more flexibility is needed for the County to willingly undertake this work.⁸

⁷The draft Resolution (at page 2, item 8.a) proposes to direct the County to “undertake an investigation to access [sic] nutrient loadings to Rainbow Creek from groundwater and septic systems.” This section further states that the County “has indicated a willingness to undertake this investigation.” That statement is incorrect. The County indicated a willingness to coordinate this study effort. County staff also provided basic study parameters and a cost estimate for an “ideal” study effort, including not only a study of loadings from septic systems but also other research. The Regional Board has proposed

to transform these study parameters and cost estimates into mandatory requirements—including a requirement that the County in fact spend the amounts it estimated would be needed for an ideal study of all issues. The County did not state that it was willing to do this work in exactly the manner postulated in its cost estimate, and thereafter specified in the draft Staff Report. The County did not indicate that it was willing to pay the entire cost of this work. The County is not willing to be locked into an inflexible four-year research plan, and is not willing to bear the entire cost of any studies of Rainbow Creek by itself.

⁸In the absence of an agreement concerning this work, the County would consider whether to challenge directives based on Water Code section 13225(c) as being inconsistent with the Water Code, and as unfunded state mandates. See footnote 2.

Footnote 2: Conditions imposed by the Water Code are included in subsection 13225(c). First, the requirement must be "necessary." Necessary reports can be required "provided that the burden including costs, of such reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained therefrom." State laws concerning unfunded mandates may also require that the state provide funding to the County to carry out any directives issued pursuant to subsection 13225(c). The County does not waive its right to assert in the appropriate forum that directions issued to the County pursuant to this subsection are unfunded state mandates.

Response:

CWC §13225 provides authority for the Regional Board to enter into a Management Agency Agreement (MAA) with the County of San Diego to encourage development of appropriate planning or regulatory programs to control nonpoint source pollution. CWC §13225 also provides authority for the Regional Board to require local agencies such as the County of San Diego to submit technical reports on water quality control, even though those entities may not be waste dischargers. Local agencies can be required to investigate the scope, causes, and sources of nonpoint source pollution, and potential practices or control measures to prevent it. The only restriction is that the burden of preparing the reports bear a reasonable relationship to the need for and the benefits to be obtained from the reports.

The revised Rainbow Creek TMDL provides that the Regional Board will direct the County of San Diego to submit the following three major technical reports:

1. Nutrient Reduction Management Plan
2. Groundwater Investigation and Characterization Report; and a
2. Implementation Monitoring Plan

The Regional Board will provide a rationale relating the need for these reports to the projected cost of the reports in CWC §13225 Orders it issues to the County requesting the

submission of technical reports. These reports have required elements that are explained in further detail in sections 9 and 10 of the revised TMDL technical report. The Regional Board has detailed the elements to be included in the reports to ensure that the County understands the information the Board is seeking. The Basin Plan amendment language provides for the submittal of alternative or additional elements equivalent to the elements prescribed by the Regional Board that would result in equivalent protection from, or prevention of, nutrient discharges to Rainbow Creek. The Basin Plan amendment does not indicate exactly how the studies or required elements are to be accomplished and provides the County with sufficient latitude to structure a report that meets the Board's needs. The County is encouraged to submit comments on the proposed Basin Plan amendment as to what elements should be required in these reports.

The language in regard to the County's willingness to undertake the investigation has been removed from the draft Basin Plan amendment. As a part of Section 12.0 Economic Considerations, the cost estimates of water quality monitoring and studies were provided as information for the TMDL. The costs are clearly characterized in the text as "estimates" and "preliminary."

18. Comment Code: Implementation

Agency ID: San Diego County Farm Bureau

Commenter: Eric Larson

Comment:

We are unclear whether this document is the Regional Board's basin plan amendment or just the TMDLs that are to be submitted to the U.S. Environmental Protection Agency (USEPA). This must be clear. The USEPA has no implementation authority over nonpoint sources of pollution. Therefore, it is not necessary for the state to submit the implementation components of a TMDL to USEPA. We suggest that the Regional Board not submit such implementation components to USEPA in that the USEPA has no authority or jurisdiction and there is no reason to give them the opportunity to review and comment on such implementation plans.

Response:

The Regional Board's proposed action in the revised TMDL is a Basin Plan amendment incorporating the language described in Attachment A to tentative Resolution No. 2004-0401 into the Basin Plan. The Basin Plan amendment includes language describing all elements of the Rainbow Creek TMDL including problem statement, numeric targets, source assessment, total maximum daily loads, load allocations, wasteload allocations, implementation action plan and implementation monitoring plan.

The Regional Board agrees that USEPA has no direct authority under the Clean Water Act to implement or enforce nonpoint source controls.

TMDL implementation plans are not currently required under federal law; however, it is USEPA policy that TMDLs should include implementation plans. TMDL implementation plans are required under state law.

CWA § 303(e) requires that TMDLs, upon USEPA approval, be incorporated into the state's water quality management plans (Basin Plan). State law in turn, CWC §§ 13050(j) and 13242 require that basin plans have a program of implementation to achieve water quality objectives. The implementation program must include a description of actions that are necessary to achieve the objectives, a time schedule for these actions, and a description of surveillance to determine compliance with the objectives. State law requires that a TMDL include an implementation plan because the TMDL normally is, in essence, an interpretation or refinement of an existing water quality objective. The TMDL has to be incorporated into the basin plan under CWA § 303(e), and, because the TMDL supplements, interprets, or refines an existing objective, state law requires a program of implementation.

The revised Rainbow Creek TMDL is a Basin Plan amendment that must be approved by the USEPA in its entirety pursuant to Clean Water Act § 303(d)(2), and federal regulations in 40 CFR 130.6, and 40 CFR 130.10. Accordingly, the Regional Board will be seeking USEPA approval of the Rainbow Creek TMDL Basin Plan amendment in its entirety, including the implementation plan component, following adoption by the Regional Board and approval by the State Water Resources Control Board.

19. Comment Code: Implementation

Agency ID: Hines Nurseries

Commenter: Bud Summers

Comment:

The first phase of the TMDL implementation should last for five years to allow the results of the new Hines Nursery recycling system and septic tank improvements made with AB 885 funds to become apparent.

Response:

The revised Rainbow Creek TMDL requires that the first phase of nutrient load reductions be achieved by December 31, 2009. This provides an appropriate amount of time to implement MPs to attain the nutrient load reductions. The timing of the implementation and funding provisions of AB 885 is uncertain and the Regional Board is not willing to further delay or extend the first phase of implementation beyond 2009.

20. Comment Code: Implementation**Agency ID:** San Diego County Farm Bureau**Commenter:** Eric Larson**Comment:**

Section 9.5.1.1(C) Land Use Planning of the Staff Report dated March 22, 2002, indicates the Regional Board's desire to direct and evaluate county land use ordinances and their provisions. We must state our concern with the Regional Board injecting itself into land use decision making. It is one thing for the Regional Board to make the County the lead agency for the NRMP, but quite another to have the County answer to the Regional Board on land use matters. We can think of no other regulatory agency that assumes such a role.

Section 9.5.1.1(D) CEQA Responsibilities, also raises concerns about Regional Board participation in local land use decisions. A reading of this paragraph implies that the Regional Board is asking the County to apply CEQA requirements and mitigation measures on agricultural operations, a condition that does not currently exist. As in the preceding paragraph, the Regional Board's concern should be meeting water quality objectives, not influencing land use decision making.

Response:

The Regional Board has authority to regulate discharges of waste that could affect the quality of the waters of the state by issuance and enforcement of waste discharge requirements that will ensure the attainment of water quality consistent with the water quality objectives established in the basin plan. While the Regional Board should not interfere in land use planning by local governments, it may properly require municipalities to consider the water quality consequences of land use planning decisions involving development projects and construction, and to exercise local government authority to ensure that the consequence of land use planning decisions will not cause or contribute to the threat of pollution in waters of the state associated with discharges of pollutants.

The revised Rainbow Creek TMDL does not specifically limit or restrict land use or CEQA in the Rainbow Creek Watershed. In light of the persistence of the nutrient water quality impairment conditions in the Rainbow Creek watershed and the need for increased regulatory oversight, the Regional Board proposes to use a Third Party regulatory based approach to mandate compliance with the nonpoint source (NPS) nutrient load reductions of this TMDL. The Regional Board proposes to accomplish this by negotiating a Management Agency Agreement (MAA) between the Regional Board and the County of San Diego setting forth the commitments of both parties to undertake

various implementation responsibilities for the NPS nutrient load reductions of this TMDL. The success of the MAA approach is contingent on the County of San Diego's willingness to undertake the role of a lead NPS management and use its principal land use planning authority governing land use practices in the Rainbow Creek watershed to control NPS nutrient pollution in the Rainbow Creek watershed.

21. Comment Code: Implementation

Agency ID: San Diego County Farm Bureau

Commenter: Eric Larson

Comment:

The primary implementation component for these TMDLs is a County prepared Nutrient Reduction and Management Plan (NRMP). It is our belief that this is a new implementation approach, not seen in other TMDLs. We would like assurances that agriculture will have a place at the table when the County prepares the plan, but see no such mention in the TMDL. We also believe it would be appropriate to have participation by the University of California Cooperative Extension Service. There should also be assurances that the plan will be subject to public review and Regional Board approval.

Response:

Under the terms of revised Rainbow Creek TMDL , the County of San Diego will be the lead agency in developing the Nutrient Reduction and Management Plan (NRMP). It is anticipated that all interested parties and stakeholders will have a chance to review and comment on the NRMP. The Regional Board will consider, following concurrence with the County of San Diego's (NRMP) for Rainbow Creek, entering into a Management Agency Agreement (MAA) with the County of San Diego. The MAA would set forth the commitment of both parties to undertake various oversight responsibilities for the nonpoint source nutrient load reduction component of this TMDL, and the County's commitments to implement the NRMP.

In conjunction with an MAA or MOU with the County of San Diego describing an adequate NPS pollution control implementation program, the Regional Board will adopt individual or general waivers or waste discharge requirements (WDRs) for NPS discharges in the Rainbow Creek watershed. The waivers or WDRs will require NPS dischargers to either participate in the third party NPS program or, alternatively, submit individual pollution prevention plans that detail how they will comply with the waivers and WDRs. Alternatively, the Regional Board may adopt a discharge prohibition, which includes exceptions for those dischargers who participate in the County's non point source pollution control implementation.

The Regional Board shall will also consider entering into a memorandum of understanding (MOU) to document cooperative agreements with other agencies or organizations that are able to provide information, technical assistance, or financial assistance to dischargers to support the Regional Board's goals of attaining the nutrient load reductions required under this TMDL and compliance with the nutrient water quality objective. These agencies and organizations would include, but are not limited to, the United States Department of Agriculture, Natural Resources Conservation Service (NRCD), Mission Resource Conservation District (MCRD), and the University Of California Cooperative Extension (UCCE).

22. Comment Code: Implementation

Agency ID: County of San Diego

Commenter: Gary Erbeck

Comment:

TMDL programs for Rainbow Creek should be implemented on a phased basis, both to sequence regulatory actions properly and to ensure that appropriate science is in place to support policy decisions.

Response:

The Regional Board has structured an adaptive implementation action plan in the revised Rainbow Creek TMDL that simultaneously makes progress towards achieving nutrient water quality objectives while relying on monitoring data to reduce uncertainty and fill data gaps as time progresses. This monitoring data can be used to revise and improve the initial TMDL forecast over time. This type of approach will help ensure that the Rainbow Creek TMDL program is not halted because of a lack of data and information, but rather progresses while better data are collected to verify or refine assumptions, resolve uncertainties, and improve the scientific foundation of the TMDL.

23. Comment Code: Legal Issues

Agency ID: County of San Diego

Commenter: Gary Erbeck

Comment:

Make and support required findings before imposing investigation, reporting or analysis requirements on the County. Water Code section 13225(c) allows the Regional Board to impose these requirements on a local agency only if the requirements are “necessary” and only provided the burdens of the imposition including costs are reasonable in comparison to the need for the report and the benefits to be obtained therefrom. The Regional Board has not done the work required to support the imposition of study requirements on the County under these standards. They have reported the costs of an ideal study as reported to them by County staff, but analysis and findings concerning necessity, burden, and benefits are lacking. The draft Resolution includes proposed Finding No. 17, but that is a general finding concerning all benefits and all costs of TMDL implementation, not a finding that addresses the requirements of section 13225(c).

Response:

CWC §13225 provides authority for the Regional Board to require local agencies such as the County of San Diego to submit technical reports on water quality control, even though those entities may not be waste dischargers. Local agencies can be required to investigate the scope, causes, and sources of nonpoint source pollution, and potential practices or control measures to prevent it. The only restriction is that the burden of preparing the reports bear a reasonable relationship to the need for and the benefits to be obtained from the reports. The Regional Board will provide a rationale relating the need for these reports to the projected cost of the reports in CWC §13225 Orders it issues to the County requesting the submission of technical reports.

In the Economic Considerations Section of the Regional Board’s Rainbow Creek TMDL Report, cost estimates are provided for monitoring and implementation of selected BMPs.

24. Comment Code: Legal Issues

Agency ID: San Diego County Farm Bureau

Commenter: Eric Larson

Comment:

In reviewing the fifty-two listed events on Attachment D of the Staff Report dated March 22, 2002 preceding today's public hearing, three involved public participation. Two in 1999, and one on April 11th of this year. While technically meeting the letter of the law, it is our hope that the Regional Board feels that every means available has been used to notify and engage the residents, property owners, farmers and nurserymen of the Rainbow Creek Watershed.

Response:

The Regional Board has provided adequate opportunities for public participation. In addition to the events listed in Appendix I of the revised Rainbow Creek TMDL, the Regional Board has posted the draft documents, public presentations, and other relevant documents on Regional Board's website as they became available.

Since the release of the draft Staff Report in 2002, the Regional Board has met with the TAC on December 18, 2002 to discuss the Economic Considerations. Furthermore, the Regional Board met with Caltrans on December 30, 2002 and again on March 19, 2003 to discuss Caltrans specific issues.

In 2004, the revised Rainbow Creek TMDL will be released for another public review in mid October 2004.. Notice of the release of the revised Rainbow Creek TMDL documents has been circulated to all known interested parties. The revised Rainbow Creek TMDL documents will be posted on the Regional Board website during this public review period which ends December 8, 2004. The Regional Board will be holding a workshop to consider public comments on November 17, 2004. It is the Regional Board's intent to continue with meetings, public participation, and solicitation of comments during throughout the comment period until the public hearing on December 8, 2004. At any time during this period, public comments may be submitted to the Regional Board.

25. Comment Code: Legal Issues

Agency ID: Hines Nurseries

Commenter: Bud Summers

Comment:

An additional concern created by the premature establishment of a Nutrient TMDL for Rainbow Creek, is the requirement within the Clean Water Act that only those TMDLs that are "suitable for such calculation" are to be developed. (See 33 U.S.C. § 1313(d)(1)(c).) In the regulations to the Clean Water Act, EPA defined when TMDLs are "suitable for calculation" by finding that all pollutants are suitable for calculation under "proper technical conditions" in which to base the development of the TMDL. (See 43 Fed. Reg. 60662). The phrase "Proper Technical Conditions" was explained by EPA as referring to "the availability of the analytical methods, modeling techniques and a data base necessary to develop a technically defensible TMDL." USEPA went on to conclude that "these elements were to vary in their level of sophistication depending on the nature of the pollutant and characteristics of the segment in question. It must be determined on a case-by-case basis." (Id.)

Response:

The Regional Board has adequate analytical information to calculate and establish technically defensible TMDLs. In establishing the nutrient TMDL and load allocations, the Regional Board incorporated the following sources of data and information into the Technical Report:

- 8 years of site specific USGS stream flow data.
- Site specific water quality data collected by the Regional Board in 2000.
- Published nutrient export coefficients.
- City of San Diego water quality data from selected streams within the County.

The Rainbow Creek TMDLs have been peer reviewed twice by technical experts and none of the peer review comments suggested that the TMDLs were not "suitable for calculation." It is worth noting that if a high level of scientific certainty was required regarding every TMDL, a margin of safety would not be included in the TMDL equation.

26. Comment Code: Rainbow Creek Draft Document

Agency ID: Hines Nurseries

Commenter: Bud Summers

Comment:

The two incorrect references to Hines should be deleted from the Staff Report.

Response:

The two statements referred to in this comment have been deleted from the revised Rainbow Creek TMDL. The two statements were the first and last sentences of the fourth paragraph of Section 9.5.1.4 if the Staff Report dated March 22, 2002. This paragraph is now located in Section 2.2.

27. Comment Code: Rainbow Creek Draft Document

Agency ID: US EPA- Region 9

Commenter: Peter Kozelka

Comment:

The first sentence of Section 6.0 is misleading. It could be changed to.....A TMDL is less than or equivalent to the loading capacity after taking into account "allocations for all sources and a margin of safety."

Response:

The recommended change has been made.

28. Comment Code: Rainbow Creek Draft Document

Agency ID: US EPA- Region 9

Commenter: Peter Kozelka

Comment:

Section 5.0 should be titled “Loading Capacity and Linkage Analysis” to clarify its contents.

Response:

The recommended change has been made.

29. Comment Code: Responsible Parties/Dischargers

Agency ID: County of San Diego

Commenter: Gary Erbeck

Comment:

Do not characterize the County as a “responsible party” or as a “discharger” for this watershed. The County acknowledges that it is a “local agency” that is subject to Regional Board direction related to studies and monitoring, under certain conditions, pursuant to California Water Code section 13225(c). The County also acknowledges that it has a significant role to play in this watershed as a land use authority, a public health agency, and a permitting agency for some new septic system installations. However, these various roles do not make the County a “discharger” or a “responsible party” for nitrogen and phosphorus loadings to Rainbow Creek.

Response:

The revised Rainbow Creek TMDL documents does not refer to the County of San Diego as a responsible party for NPS discharges that are not under the County’s direct control.. Under the terms of revised Rainbow Creek TMDL , the County of San Diego

will be the lead agency in developing the Nutrient Reduction and Management Plan (NRMP). The Regional Board will consider, following concurrence with the County of San Diego's (NRMP) for Rainbow Creek, entering into a Management Agency Agreement (MAA) with the County of San Diego. The MAA would set forth the commitment of both parties to undertake various oversight responsibilities for the nonpoint source nutrient load reduction component of this TMDL, and the County's commitments to implement the NRMP.

In conjunction with an MAA or MOU with the County of San Diego describing an adequate NPS pollution control implementation program, the Regional Board will adopt individual or general waivers or waste discharge requirements (WDRs) for NPS discharges in the Rainbow Creek watershed. The waivers or WDRs will require NPS dischargers to either participate in the third party NPS program or, alternatively, submit individual pollution prevention plans that detail how they will comply with the waivers and WDRs. Alternatively, the Regional Board may adopt a discharge prohibition, which includes exceptions for those dischargers who participate in the County's non point source pollution control implementation.

Any Regional Board enforcement action taken will be against individual dischargers and not the County of San Diego (unless the waste discharge is directly caused or permitted by the County). The Regional Board will also provide assistance to the County of San Diego as necessary to enforce implementation of MPs and the nutrient load reductions specified in this TMDL.

30. Comment Code: Responsible Parties/Dischargers

Agency ID: Hines Nurseries

Commenter: Bud Summers

Comment:

In short, Hines firmly believes that the evidence shows that Hines has not caused or in any way contributed to a condition of pollution, contamination, or nuisance, and that to the contrary, its actions, and those of its predecessor have significantly improved the condition of Rainbow Creek. The evidence of the benefit of these improvements are supported by the Regional Board's report entitled "Total Maximum Daily Load for Nutrients, Rainbow Creek, San Diego County," dated April 2000. This report concluded that monitoring conducted in 1998-1999 reported a reduction in average nitrate concentrations in Rainbow Creek at Willow Glen Road from the 1986 annual average of 48.7 mg NO₃-N/L down to 1.73 mg NO₃-N/L. This monitoring report, combined with the existing recycling system Hines has been implementing for several years in connection with its irrigation waters, and the fact that a large majority (up to 80% or more) of its irrigation waters are already recycled, is strong evidence that Hines has not taken any action that has created a condition of pollution, contamination, or nuisance.

Response:

The Regional Board is aware that Hines Nursery has taken actions to reduce impact of their discharge to Rainbow Creek downstream of their facility. Significant reductions to the nitrogen (N) and phosphorus (P) concentrations in the Creek have been noted. Unfortunately, the nutrient concentrations downstream from Hines Nursery are still above desired levels. Most notable is the total phosphorus levels recorded in 2000 at Oak Crest which is just downstream from Hines Nursery. The average recorded total phosphorus was 1.13 mg/L based on 9 samples. Further downstream at Willow Glen and Riverhouse sampling stations, the total phosphorus ranged from 0.39 to 0.49 mg P/L and 0.12 to 0.21 mgP/L respectively, during the same sampling period. Hines Nursery is still discharging irrigation water into Rainbow Creek and the Regional Board believes this unpermitted discharge is contributing to the nutrient loading of Rainbow Creek. The assertion that "Hines has not taken any action that has created a condition of pollution, contamination, or nuisance" is contrary to past and present irrigation practices at the nursery.

The sentence in section 9.5.1.6 in the Rainbow Creek TMDL document dated March 22, 2002, which states "Hines Nursery is in violation of the waste discharge prohibition for discharge of waste to waters of the state in a manner causing a condition of pollution, contamination, or nuisance" has been deleted.

31. Comment Code: Septic Tank Disposal Systems

Agency ID: County of San Diego

Commenter: Gary Erbeck

Comment:

Properly functioning conventional septic systems are not designed to remove large quantities of nitrogen. They are designed to convert organic nitrogen and ammonia to nitrate, to remove some nitrogen altogether through denitrification, and to remove all pathogens. Additional nitrogen is removed by plant assimilation in the septic system leach field. While failing septic disposal systems would undoubtedly add more nitrogen to the subsurface than functioning systems, most of the systems in the Rainbow Creek watershed are functioning properly.

Response:

Although most of the septic tank systems in the watershed may be functioning properly, the majority of the failing septic tank systems are located in the alluvial valley, where the groundwater has the highest potential to discharge to Rainbow Creek. The failing systems are discharging nitrogen (N) directly to groundwater because there is minimal or no separation between the leach field discharge point and the water table. Without the

proper separation between the leach field and the groundwater, reduction of the N from the effluent does not occur. While no septic system removes all N before the effluent reaches groundwater, ensuring that all systems in the watershed are working and constructed properly will reduce the N load to groundwater and Rainbow Creek.

The Environmental Considerations section 8.4.1 of the revised Rainbow Creek TMDL describes management measures and practices that can be used to reduce nitrogen loadings from septic tanks.

32. Comment Code: Septic Tank Disposal Systems

Agency ID: County of San Diego

Commenter: Gary Erbeck

Comment:

Set realistic load reduction targets for onsite wastewater treatment systems that are tied to AB 885 program implementation. As previously discussed in this letter, achieving a 50% reduction in septic tank disposal system loadings watershed-wide is almost certainly not feasible and is probably physically impossible under the most ideal of soil conditions, unless properly functioning systems are replaced. Replacements are only likely to be achievable to the extent state financial subsidies are provided under the provisions of AB 885. Load allocations and implementation schedules must reflect these limitations.

Response:

The Regional Board agrees that replacing existing septic systems may be very costly. The revised Rainbow Creek TMDL implementation plan provides a 16 year time period to attain the septic tank nutrient load reductions.

Assembly Bill 885, now adopted as Chapter 4.5 of the Porter-Cologne Act, requires the State Water Resources Control Board to promulgate regulations and standards for the permitting and operation of prescribed onsite sewage treatment systems and for the Regional Boards to incorporate those regulations into their Basin Plans. The State Board is in the process of promulgating the regulations. The Regional Board will incorporate the regulations into Basin Plan as soon as practicable upon their adoption by the State Board. The regulations currently under development include mandated nitrogen reduction performance requirements for septic tank systems that are identified as contributing to the impairment of surface water bodies listed as impaired pursuant to Section 303(d) of the Clean Water Act. As currently drafted, the new regulations require the Regional Board to issue waste discharge requirements for all septic tanks systems beginning in January 1, 2009, unless the County of San Diego assumes responsibility for

enforcement of the regulations through a Memorandum of Understanding (MOU) with the Regional Board.

The implementation of these new regulations on septic tank disposal systems in the Rainbow Creek watershed will be an important vehicle for attaining the required nutrient load reductions for septic tank disposal systems. At this time it is not known how new programs developed through AB 885 will impact the implementation of the TMDLs for septic tank systems.

33. Comment Code: Septic Tank Disposal Systems

Agency ID: County of San Diego

Commenter: Gary Erbeck

Comment:

The scope of an initial TMDL should be limited because the State has just established and is in the process of implementing a new program, complete with financial incentives, that may allow some properly functioning conventional septic systems in this watershed to be replaced with advanced systems, that would discharge less nitrogen. TMDL implementation in this watershed should be tied to the phased implementation of AB 885, but those new programs will not be in place until 2004.

Response:

Assembly Bill 885, now adopted as Chapter 4.5, Sections 13290 et seq. of the Porter-Cologne Act requires that the State Board promulgate regulations and standards for the permitting and operation of prescribed onsite sewage treatment systems and for the Regional Boards to incorporate those regulations into their Basin Plans. Among other requirements, section 13291(b) requires that the regulations shall include new requirements for systems adjacent to impaired waters.

The State Board is in the process of promulgating regulations. It is not known how new programs developed through AB 885 will impact implementation of the TMDLs at this time.

The Regional Board has a legal obligation under the Clean Water Act to adopt a TMDL for all water bodies, such as Rainbow Creek, identified as not meeting water quality standards under Section 303(d). The revised Rainbow Creek TMDL implementation plan provides a 16 year time period to attain the septic tank nutrient load reductions. It is inappropriate to delay TMDL development on the basis of future programs, whose specific content and timing are unknown at this time. The 16 year time period allowed for in the implementation plan should provide a sufficient flexibility to deal with issues arising from the new regulations.

34. Comment Code: Septic Tank Disposal Systems

Agency ID: County of San Diego

Commenter: Gary Erbeck

Comment:

The County and the Regional Board should also cooperate to implement AB 885 programs for onsite wastewater treatment systems.

Response:

The Regional Board concurs and appreciates the County's willingness to cooperate. Assembly Bill 885, adopted as Chapter 4.5, Sections 13290 et seq. of the Porter-Cologne Act, requires the State Board to promulgate regulations and standards for the permitting and operation of prescribed onsite sewage treatment systems and for the Regional Boards to incorporate those regulations into their Basin Plans. Following that the Regional Board will likely pursue negotiating a Memorandum of Understanding (MOU) with the County of San Diego to assume responsibility for enforcement of the regulations.

35. Comment Code: Septic Tank Disposal Systems

Agency ID: County of San Diego

Commenter: Gary Erbeck

Comment:

Achieving a 50% reduction in septic system-derived loadings of nitrogen to Rainbow Creek is almost certainly not feasible, and is probably physically impossible under the most ideal of soil conditions, unless significant numbers of properly functioning conventional septic tank disposal systems are replaced with very costly alternative systems.

Response:

The Regional Board agrees that replacing existing septic systems may be very costly. The schedule of the implementation plan is intentionally written to allow incremental reductions towards achieving the N and P water quality objectives. The revised Rainbow Creek TMDL implementation plan provides a 16 year time period to attain the septic tank nutrient load reductions.

Assembly Bill 885, now adopted as Chapter 4.5 of the Porter-Cologne Act requires the State Board to promulgate regulations and standards for the permitting and operation of prescribed onsite sewage treatment systems and for the Regional Boards to incorporate those regulations into their Basin Plans. The regulations currently under development include mandated nitrogen reduction performance requirements for septic tank systems that are identified as contributing to the impairment of surface water bodies listed as impaired pursuant to Section 303(d) of the Clean Water Act. As currently drafted, the new regulations require the Regional Board to issue waste discharge requirements for all septic tanks systems beginning in January 1, 2009, unless the County of San Diego assumes responsibility for enforcement of the regulations through a Memorandum of Understanding (MOU) with the Regional Board.

The implementation of these new regulations on septic tank disposal systems in the Rainbow Creek watershed will be an important vehicle for attaining the required nutrient load reductions for septic tank disposal systems. At this time it is not known how new programs developed through AB 885 will impact the implementation of the TMDLs for septic tank systems.

36. Comment Code: Technical Issues

Agency ID: County of San Diego

Commenter: Gary Erbeck

Comment:

The proposed TMDL calculations are scientifically and mathematically flawed. In discussions with County staff and legal counsel at a meeting on April 16, 2002, the Regional Board was unable to explain how the allowable loadings proposed in this Technical Report are related to estimated natural loadings to Rainbow Creek, or to estimated loadings required to reach the numerical water quality targets.

Response:

The Regional Board has revised the TMDL and background load calculations. Both of these calculations now utilize Rainbow Creek flow data collected by the USGS gaging station (See Appendix E - Technical Support Document: Streamflow, Seasonal Variation, and Flow Tiers). In the case of the TMDL calculations, the total nitrogen and total phosphorus TMDLs are now calculated by multiplying the numeric targets (1.0 mg N/L and 0.1 mg P/L) with the annual flow volume of Rainbow Creek. Similarly, a background load is calculated by multiplying representative background concentrations with the annual flow volume. Nutrient water quality data collected from minimally impaired streams in San Diego County have been assessed to establish nutrient

background concentrations for San Diego County. The approach and data used in the background assessment can be found in Appendix D - Technical Support Document: Background Concentrations. The remainder of the TMDLs, after background and a margin of safety are subtracted, are then allocated to point and nonpoint sources based on considerations of the various sources (See Appendix F - Load Allocation Analysis).

37. Comment Code: Technical Issues

Agency ID: Hines Nurseries

Commenter: Bud Summers

Comment:

The daily load allocations specified in Table 4-Y of the draft Basin Plan Amendment (Attachment A to Resolution No. R9-2002-0108) should be enforced based on a running 30-day average. This would provide an allowance for irrigation system malfunctions or other problems while meeting the objectives of the TMDLs. Since the proposed biostimulatory criteria are so low and there is no actual nutrient impairment, this should more than protect beneficial uses.

Response:

The TMDLs' allocations are based on a total annual load, rather than a daily load, and this load is not to be exceeded. If load requirements are incorporated into a permit, the method of enforcement will be determined at that time.

38. Comment Code: Technical Issues

Agency ID: County of San Diego

Commenter: Gary Erbeck

Comment:

The visual characterizations of algal growth may not be reliable even as to the locations called out by staff. Two of the Regional Board's three peer reviewers have questioned the use of visual observations alone to determine whether algae and plant growth is "excessive." Dr. Rhea Williamson notes that determining visually whether there is excessive algae growth "can be misleading." (Appendix J, page 2 of J-2, first comment regarding page 5 of the staff report) Dr. David Jenkins asks, "where are the data on emergent plant and algal numbers to support your statement that both are 'excessive'."

The Regional Board was unable to respond with data, as no data are available yet to make this showing. (Attachment J, J-3 at “Summary of asterisked comments” for page 8 of the staff report).

Response:

Regardless of the presence or absence of algae, nitrogen and phosphorus levels are exceeding the Biostimulatory Substances water quality objective. Water quality data collected in 2000 support the designation of Rainbow Creek as an impaired waterbody. The 2002 303(d) List of impaired waterbodies was updated to reflect that nitrogen and phosphorus are the cause of impairment and the TMDL must be developed to address these impairments.

The Regional Board noted abundant algal growth at monitoring locations in Rainbow Creek during regular site observations and sampling events conducted during 1999-2000. It was noted as a qualitative assessment/observation that lends support to the assumption that increased nutrient concentration promotes increased algal growth when other factors present favorable conditions. The discussion about excess algae within the revised Rainbow Creek TMDL document and the color photographs in Appendix C, are used as supporting information.

39. Comment Code: Technical Issues

Agency ID: County of San Diego

Commenter: Gary Erbeck

Comment:

The Regional Board considers the algal and emergent plant growth they have visually observed in Rainbow Creek to be excessive. (See draft Staff Report, p. 7.) This observed condition is not creek-wide. Rainbow Creek is about five to six miles long. Much of it is shaded by a plant canopy, and no excess algae have been observed in shaded areas. The growth of algae was visually judged by staff to be excessive at only two locations in 1999, and at only four locations in 2000. All of these areas have shallow slow moving water and no overhanging canopy. (Draft Staff Report at p. 7-8, and attached photos.)

Response:

It was not the intent of Regional Board to imply that excessive emergent plant growth extends along the entire length of Rainbow Creek. The Regional Board noted algae growth at certain locations in Rainbow Creek during regular site observations and sampling events conducted during 1999-2000. It was noted as a qualitative assessment/observation that lends support to the assumption that increased nutrient

concentration promotes increased algal growth. The mention of excess algae within the revised Rainbow Creek TMDL document, along with the color photographs in the appendix, are used as supporting information.

The 2002 Clean Water Act section 303(d) list describes Rainbow Creek as impaired for elevated levels of nitrogen and phosphorus. Therefore, the focus of the Rainbow Creek TMDL is the nitrogen and phosphorus concentrations in the Creek. Water quality data collected along the length of the Creek show strong indication that the nutrient water quality standards are being exceeded on a regular basis, and that the listing as an impaired water body and the development of a TMDL is warranted.

40. Comment Code: Technical Issues

Agency ID: County of San Diego

Commenter: Gary Erbeck

Comment:

Even though pre-human nitrogen loadings to Rainbow Creek were likely to have been about 2,400 kg/yr, this TMDL package proposes a nominal TMDL for nitrogen that would require total nitrogen loadings to be reduced to less than two-thirds that level. Under this scenario, undeveloped land could be left to nature and could continue to release nitrogen to the creek, but all nitrogen discharges from land touched by man (even if only touched by designation as a “preserve”) would eventually have to be eliminated. It would not be sufficient merely to reduce discharges back to natural levels.

Response:

New methods for determining background nutrient loads and nutrient loading to Rainbow Creek have been incorporated into the revised TMDL Report. The revised Technical Report now uses the water quality data from several minimally-impacted streams within San Diego County and flow data to calculate the background loads (see Appendix D). Therefore, the method used to arrive at 2,400 kg/yr for nitrogen loading no longer applies.

41. Comment Code: Technical Issues

Agency ID: County of San Diego

Commenter: Gary Erbeck

Comment:

None of these numbers are certain, of course. But it is nonetheless clear that the Regional Board should not launch a TMDL development process in San Diego by proposing to set TMDLs for Rainbow Creek at levels that are two-thirds to one-fifth of natural loadings, based on an impairment listing that staff concedes has no basis in fact. To do so would be scientifically unsupportable, inconsistent with the Water Code, and politically unwise. Any such proposal would be damaging to the successful implementation of TMDLs in San Diego and elsewhere.

Response:

The Regional Board has modified the approach for calculating nutrient background loads by utilizing actual background data for San Diego County. The new approach uses nitrogen and phosphorus data from relatively clean streams in San Diego County to estimate the nutrient background loads for Rainbow Creek (see Appendix D). This method replaces the use of export coefficients for estimating nutrient background loads. The revised background loads are less than the proposed TMDLs and no longer support the statement that the TMDLs "are two-thirds to one-fifth of natural loadings".

In regard to the impairment listing, the original listing for Rainbow Creek was based on excessive nitrate concentrations documented during the mid-1980s, but listed for the pollution condition of "eutrophic". As a result of further monitoring and evaluation during the development of this Technical Report, a recommendation was made that the impairment listing be clarified and revised from "eutrophic" to "nitrogen and phosphorus" for exceedance of the Biostimulatory Substances Objective. The 2002 303(d) List Update, which included this revision of the impairment listing for Rainbow Creek, was approved by the USEPA in July 2003.

42. Comment Code: Technical Issues

Agency ID: County of San Diego

Commenter: Gary Erbeck

Comment:

Efforts to reduce nitrogen to these levels would themselves have environmental consequences for the lands affected. Reducing loadings of nitrogen and phosphorus to Rainbow Creek to below the level of natural loadings could also have environmental impacts on Rainbow Creek—under the plan proposed by the Regional Board, Rainbow Creek would receive less nitrogen and phosphorus than it did in its natural condition. The environmental effects of driving nutrient loadings down to these unnatural levels

were not disclosed or addressed in the environmental checklists and analyses prepared for this project.

Response:

The Regional Board has modified the approach for calculating nutrient background loads by utilizing actual background data for San Diego County. The new approach uses nitrogen and phosphorus data from relatively clean streams in San Diego County to estimate the nutrient background loads for Rainbow Creek. This method replaces the use of export coefficients for estimating nutrient background loads. The revised background loads are less than the proposed TMDLs and no longer support the statement that the proposed TMDLs will reduce nitrogen and phosphorus loading below natural levels.

The approach and data used in the background calculations can be found in Appendix D - Technical Support Document: Background Concentrations and Appendix E - Technical Support Document: Streamflow, Seasonal Variation, and Flow Tiers.

43. Comment Code: Technical Issues

Agency ID: San Diego County Farm Bureau

Commenter: Eric Larson

Comment:

Section 2.6 discusses how dissolved oxygen (DO) concentrations were not low enough to cause an adverse effect and that DO is not expected to be depressed below the water quality standard. Yet, it then states that there are no results to support that assumption. However, there are clearly no results to not support the assumption either. Since there is not reason to suspect DO problems, then DO monitoring is not necessary. The Staff Report is specific to nutrients and algal growth and should therefore stay focused on the problem statement and not go looking for other issues.

Response:

The Regional Board agrees that the focus of the TMDL should be on nutrient related issues. However, monitoring for dissolved oxygen, in conjunction with temperature, conductivity, and pH, is a standard measurement of water quality and will be used as one of several indicators of water quality conditions that may impact beneficial uses to Rainbow Creek. Dissolved oxygen data may also be useful if a site-specific water quality objective is proposed.

44. Comment Code: Technical Issues**Agency ID:** Hines Nurseries**Commenter:** Bud Summers**Comment:**

The Southern California Coastal Water Research Project (SCCWRP) study referenced in the Staff Report indicates that the coefficient for agriculture was based on one site located in Ventura County. For the subject TMDLs, coefficients should be developed for inland San Diego County commercial nurseries, field agriculture, and orchards. The coefficients used in the SCCWRP study may have been appropriate for a regional study of coastal waters, however, they are not appropriate for a regulatory document, such as a TMDL Staff Report. Additional research is required to develop appropriate coefficients.

Response:

The Regional Board agrees that site-specific land use coefficients would have been ideal for this TMDL. Unfortunately, to our knowledge, none exist for Rainbow Creek or San Diego County. A brief discussion has been added to Section 4.0 Source Assessment of the revised Technical Report that discusses the selection process for the nutrient export coefficients.

The Regional Board is willing to consider other export coefficients and load calculation methods. With the exception of USEPA, no comments were made by the stakeholders or the peer review panel with suggestions or modifications to the use of export coefficients. USEPA submitted information on load calculations and that information was incorporated into the revised TMDL Report.

45. Comment Code: Technical Issues**Agency ID:** County of San Diego**Commenter:** Gary Erbeck**Comment:**

Don't require reduced discharges of nitrogen or phosphorus from preserves. Discharges from preserves are natural, background discharges. They cannot be reduced without interfering with preservation of the land in its natural state. Yet, the proposed Staff Report would require the same proportional reductions in nitrogen and phosphorus loadings from these lands as from agriculture and septic tank disposal systems.

Response:

The Technical Report has been modified and load reductions are no longer specified for preserve lands.

46. Comment Code: Technical Issues

Agency ID: San Diego County Farm Bureau

Commenter: Eric Larson

Comment:

Page two of the executive summary indicates that there are no wasteload allocations made for these TMDLs; however, there are urban areas within the watershed. If the urban areas are served by publicly (or privately owned treatment facilities, such as Oak Crest Mobile Estates and Rainbow Conservation Camp) then there are point sources within the watershed that must be considered.

Response:

Oak Crest Mobile Estates uses concrete lined evaporation ponds at their facility. The Regional Board does not consider the Oak Crest Mobile Estates waste water treatment facility a point source discharge within the meaning of the Clean Water Act.

The California Department of Forestry and Fire Protection (CDFFP) is responsible for operating Rainbow Conservation Camp and is named as a responsible party in the revised TMDL Report. CDFFP will be directed to undertake an investigation on possible impacts from their septic tanks and percolation ponds on Rainbow Creek. See Section 9.7, CA Department of Forestry and Fire Protection, in the revised TMDL Report.

47. Comment Code: Technical Issues

Agency ID: Hines Nurseries

Commenter: Bud Summers

Comment:

The Staff Report also establishes annual load allocations for commercial nurseries for both nitrogen and phosphorus (see Tables 6-1 and 6-2) that are both unrealistic and unobtainable. The data and analysis in the Staff Report simply do not support the load

allocations developed thereunder, specifically for commercial nurseries. For example, in Table 4-1, the Staff Report assumes an annual total nitrogen load of 611 kilograms per year for commercial nurseries. The reference to 611 kilograms per year is apparently based on a figure of 4.1 kilograms per hectare per year as an export coefficient, which, according to the reference, was derived from a 2000 report from the Southern California Coastal Water Research Project (SCCWRP). Yet, a review of the SCCWRP 2000 report shows that it does not contain any coefficient for commercial nurseries. Rather, and to the contrary, it only contains co-efficients for general commercial facilities (e.g., shopping centers, restaurants and the like), and for agriculture.

Response:

The Technical Report has been revised to use the export coefficient for agriculture from the SCCWRP 2000 report.

48. Comment Code: Technical Issues

Agency ID: San Diego County Farm Bureau

Commenter: Eric Larson

Comment:

The stated inability to reduce loads from parks, preserves, and urban areas places an additional burden on agricultural uses, among others. Any load generated by human activity can be reduced and should carry its fair share, even if its contribution is small.

Response:

The total nitrogen and total phosphorus allocations have been revised to include parks and urban areas in Rainbow Valley. Preserves, which are natural lands, are considered to contribute to the background load.

49. Comment Code: Technical Issues

Agency ID: Hines Nurseries

Commenter: Bud Summers

Comment:

In developing a TMDL for any impaired water body, an assimilative capacity study should first be conducted in order to determine the pollutant load the water body can assimilate before becoming impaired. That is, the TMDL “load allocations” and “waste load allocations” which may be discharged into a water body without impairing the beneficial uses, can only be developed after the assimilative capacity of the water body has first been identified. There is thus no basis to determine a load allocation or a waste load allocation (i.e., there is no basis to develop a TMDL), where the assimilative capacity of the water body has not been established. Hines would thus recommend that additional monitoring and a study of the assimilative capacity of the various reaches of the creek be conducted before adopting the subject TMDL, as the assimilative capacity of the water body is the cornerstone of any properly developed TMDL.

Response:

The assimilative capacity or loading capacity is the maximum amount of nutrients that can enter into the water column without exceeding the water quality standards. In this case, the biostimulatory target concentration for total nitrogen and total phosphorus are the applicable water quality standard. For this TMDL, nitrogen and phosphorus loading capacities were calculated by multiplying the desired water quality concentrations, 1.0 mg N/L and 0.1 mg P/L, times the annual flow volume of Rainbow Creek. Using the Biostimulatory Substances water quality objectives for nitrogen and phosphorus in conjunction with site-specific flow data is an appropriate basis for establishing load capacity that incorporate the best available information. A detailed description of the annual load capacity calculations are included in Section 5.0 of the Technical Report.

50. Comment Code: Technical Issues

Agency ID: US EPA- Region 9

Commenter: Peter Kozelka

Comment:

Table 5-1 of the Staff Report should be modified to remove information about current load and interim loading capacity or postpone this table until a later section of the document. Instead, Table 5-1 shall define the loading capacity for biostimulatory total nitrogen and total phosphorus.

Response:

Table 5-1 has been modified to only present the loading capacity for total nitrogen and total phosphorus.

52. Comment Code: Technical Issues

Agency ID: County of San Diego

Commenter: Gary Erbeck

Comment:

The Regional Board's proposed approach to actually implementing these TMDLs would not treat the TMDLs themselves as stopping points. Instead, the draft Basin Plan Amendment proposes that incremental reductions in nitrogen loading must continue to be achieved somehow until the numerical objective of 1.0 mg N/L is met in the creek. (See draft Amendment at pp. 2-3.) If the Regional Board is correct that meeting these targets will require reducing loadings to 402 kg N/yr as stated in footnote 1 of the draft Basin Plan Amendment, then the effective TMDL for total nitrogen is 402 kg/yr, not 1,507 kg/yr. This would require total loadings of nitrogen to be reduced to 402 kg/yr—less than one fifth of estimated natural levels.

Response:

The draft Basin Plan Amendment has been revised to establish TMDLs for total nitrogen and total phosphorus for Rainbow Creek that are equal to the load that would bring attainment of the water quality objective (1.0 mg N/L and 0.1 mg P/L, respectively). The TMDLs are required by federal regulations to be set at loads that attain water quality standards.

The Technical Report has been revised to incorporate Rainbow Creek flow data and water quality concentrations in calculating total nitrogen and total phosphorus loads to the Creek. Refer to Sections 4.0, 5.0, and 6.0 in the revised Technical Report for detailed load calculations and allocations.

Furthermore, reference concentrations for San Diego County for total nitrogen and total phosphorus have been established for these TMDLs by using data from several relatively clean streams within the region and calculating mean concentrations. The findings from the reference water quality information for these streams show that reference conditions for total nitrogen and total phosphorus below the above stated water quality objective do exist in San Diego County. Therefore the target loads are not below the estimated natural levels. Section 4.0 and Appendix D of the revised Technical Report have the methodology and descriptive statistics used in establishing reference conditions for similar streams in San Diego County.

53. Comment Code: Technical Issues

Agency ID: County of San Diego

Commenter: Gary Erbeck

Comment:

Set realistic TMDLs. TMDLs must not be set lower than estimated natural loadings for the basin, and should be set higher if that is consistent with protecting the beneficial uses of Rainbow Creek that are identified as being achievable after further study.

Response:

The Regional Board has a legal obligation under Section 303(d) of the Clean Water Act to adopt TMDLs that attain current water quality standards. It is not inconceivable that a water quality standard may be lower than natural loadings - a situation that would not allow for any additional assimilative capacity to be allocated to other sources.

In any event the Regional Board's revision of the background source estimate methodology renders the issue moot. Data collected from streams in San Diego County that are relatively free of anthropogenic sources were used to determine a background concentration and calculate a background load. This approach replaces the one referenced in the comment, which used a literature value (export coefficient) and undeveloped land area to make the estimate. Section 4.0 and Appendix D of the revised Technical Report have the methodology and descriptive statistics used in establishing reference conditions for similar streams in San Diego County.

54. Comment Code: Technical Issues

Agency ID: US EPA- Region 9

Commenter: Peter Kozelka

Comment:

The Staff Report needs some written revisions. As presented, Section 5.0 does not clearly define the loading capacity for total nitrogen and total phosphorus and present these bottom line values in a table.

Response:

The recommended change has been incorporated into the revised Technical Report. Section 5.0 now only includes the bottom line values for the total nitrogen and total phosphorus loading capacities.

55. Comment Code: Technical Issues

Agency ID: US EPA- Region 9

Commenter: Peter Kozelka

Comment:

As a consequence to modifying the loading capacity, the allocations and margin of safety will also need to be modified. These values are dependent on the quantity defined as the assimilative or loading capacity.

USEPA Region IX would support interim allocation levels as part of implementation, as long as the Staff Report clearly documents quantitative performance levels associated with desired water quality conditions and potential responses to achieving these interim levels. The attainment of all applicable water quality objectives must be clearly presented in the document.

Response:

As recommended, the interim allocations have been removed from Section 6.0 Loading Capacity and Linkage Analysis, and the allocations and margin of safety have been modified accordingly. The interim step reductions are presented and discussed in the Implementation Action Plan (Section 9.3).

56. Comment Code: Technical Issues

Agency ID: US EPA- Region 9

Commenter: Peter Kozelka

Comment:

The Draft TMDL, in section 5.1 of the Staff Report dated March 22, 2002, utilizes an indirect approach to calculating the loading capacity for total nitrogen. This indirect approach relies on interpretation of the current loading estimate and proportional reduction to define the biostimulatory loading capacity.

USEPA Region IX urges the Regional Board to directly determine the loading capacity by starting with the desired water quality objective(s) and using stream flow records to calculate the loading capacity and TMDLs for total nitrogen and total phosphorus.

Response:

The recommended change has been incorporated into the revised Technical Report. Eight years of USGS streamflow-gage data is now used to directly determine the loading capacity.

57. Comment Code: Technical Issues

Agency ID: US EPA- Region 9

Commenter: Peter Kozelka

Comment:

The Draft TMDL, in Section 5.1 of the Staff Report dated March 22, 2002, states that the biostimulatory TMDL for total nitrogen is set at 1,507 kg/yr, based on this current load from undeveloped [or background sources] land.

The Regional Board must change its approach to defining the loading capacity and TMDL for total nitrogen. As presented, USEPA cannot approve the Rainbow Creek Nutrient TMDL since it has not utilized water quality objectives to establish the loading capacity, which ultimately affects the allowable allocations. Therefore, the proposed TMDL will not result in attainment of all applicable water quality objectives.

Response:

As recommended, the approach has been changed so that the loading capacity is based on water quality objective and Rainbow Creek flow data. The TMDL load capacity is now defined as the nutrient water quality objective multiplied by the stream flow rate.

58. Comment Code: Technical Issues

Agency ID: US EPA- Region 9

Commenter: Peter Kozelka

Comment:

The proposed TMDL implies that the quantity of nutrients from undeveloped land is sufficient to determine the loading capacity and to interpret applicable water quality objectives. This assumption conflicts with 40 CFR 130.2(f) which defines loading capacity as “the greatest amount of loading that a water can receive without violating water quality standards.” TMDLs are based on the existing water quality standards. We

do not believe the Basin Plan provides an exemption from application of water quality objectives based on the idea that naturally occurring pollutant levels exceed other applicable objectives.

In the future, the Regional Board could address this issue via two options; both would require a Basin Plan amendment:

- a) adopt a different water quality objective for Rainbow Creek, presumably a site-specific value based on credible data, or
- b) define an exclusion for Rainbow Creek from meeting water quality objectives due to naturally occurring sources; again with sufficient rationale.

Response:

The approach used to calculate the TMDLs for total nitrogen and total phosphorus has been changed. The revised TMDL is now based on existing water quality standards for total nitrogen and total phosphorus and is now in compliance with 40 CFR 130.2(f).

59. Comment Code: Technical Issues

Agency ID: San Diego County Farm Bureau

Commenter: Eric Larson

Comment:

The Staff Report states that nutrients are likely contributing to the excessive algal and emergent plant growth. The next sentence then recognizes that where the growth occurred there was no riparian canopy yet where there was riparian canopy there was no algal growth. The Regional Board must be able to make the easy assumption based on actual observation that sunlight has a direct effect on the algal growth. Perhaps the easier solution to the problem is to increase the riparian canopy throughout the watershed and should be addressed.

Response:

The observations recorded only apply to small areas where samples were collected for water quality analyses. No study has been conducted on Rainbow Creek that directly correlates riparian growth, sunlight exposure, and algal density. The field observations should only be used in the context of supporting data for Rainbow Creek TMDL.

Increasing riparian growth may reduce the presence of algae; however, it will not directly address the elevated nitrogen and phosphorus levels found in the creek.

60. Comment Code: Technical Issues

Agency ID: San Diego County Farm Bureau

Commenter: Eric Larson

Comment:

The source identification incorrectly characterizes undeveloped land contributions as small when in fact Figure 4-1 identifies undeveloped land as the single biggest contributor at 33%.

Response:

Figure 4-1 graphically represents the land use contributions to surface water. It does not include groundwater or air deposition contributions. Note that "undeveloped land" is now referred to as "background" in the revised TMDL Report.

61. Comment Code: Technical Issues

Agency ID: San Diego County Farm Bureau

Commenter: Eric Larson

Comment:

The Staff Report is relying on a Caltrans document to state that their contribution was not significant. Perhaps there should be further review on CalTrans' actual contribution. Individual farmers may have insignificant contributions but they will be subject to the TMDLs and provisions of the Implementation Plan. No one should be exempt in that cumulative impacts do add up.

Response:

Caltrans contribution to the nutrient problem in Rainbow Creek has been re-evaluated and a wasteload allocation has been established for Caltrans state highway nutrient discharges in the revised TMDL report.

62. Comment Code: Technology-Based Controls

Agency ID: County of San Diego

Commenter: Gary Erbeck

Comment:

This basin has not yet reaped the full benefits that can be expected when appropriate technology-based controls have been in place at all commercial nurseries for a reasonable period of time. These nurseries are discrete and significant sources of contamination, and they are still in the process of developing and implementing nutrient control and irrigation control best management practices (BMPs) to limit nitrogen and phosphorus in their discharges. In addition, the draft Staff Report notes (at pp. 3-4) that one commercial nursery in the watershed has actually placed a dam in Rainbow Creek, and uses the creek to impound and recirculate irrigation water. Restoring the natural flow of the creek may have significant effects. Whether the controls put in place at these sources are “voluntary” or “mandatory” is not the key issue here.⁴ In either case, it is clear there are further reductions in pollutant discharges that can be attained using cost-effective technology-based measures. It will take some time to see what further effects these reductions in nitrogen and phosphorus loadings will have on Rainbow Creek. The interim reductions already achieved have had a significant beneficial effect on the creek.

⁴The Regional Board has asserted to County staff and legal counsel that discharges from these nurseries are “agricultural return flows” and therefore are not point source discharges subject to the federal Clean Water Act. If this were correct, then the Clean Water Act would not require that these nurseries be placed under permit before a TMDL was developed. Without commenting on the assertion that nurseries may be exempt from federal discharge permits, the County notes that state Water Code section 13260(a) allows the Regional Board to issue and enforce WDRs to “any person discharging waste,” and that Water Code section 13050 defines “waste” to include discharges from “any producing operation.” Commercial nurseries that discharge polluted water from a pipe into a creek could therefore be required under state law to obtain WDRs, whether or not the nurseries are required to have permits under the federal Clean Water Act.

Response:

The Regional Board agrees with the comment that implementation of appropriate management practices at all nurseries in the Rainbow Creek watershed may result in significant reductions in nitrogen and phosphorus concentrations in Rainbow Creek.

Discharges of irrigation return water from nurseries in the San Diego Region currently are regulated under the terms and conditions of the Regional Board’s Basin Plan waiver policy. For the purposes of the waiver, a “nursery” is defined as a facility engaged in growing plants (shrubs, trees, vines, etc.) for sale. Under the terms of this policy the Regional Board waives the obligation of nursery owners and operators to obtain waste discharge requirements for discharges of irrigation return water from nurseries subject to the following conditions:

- There is no discharge to waters of the United States;
- Management practices are implemented for the discharge as described in the NPS Program Plan (SWRCB, 1999);
- The discharge shall not create a nuisance as defined in the California Water Code;
- The discharge shall not cause a violation of any applicable water quality standard; and
- The discharge of any substance in concentrations toxic to animal or plant life is prohibited.

The direct discharge of irrigation return water from a commercial nursery to Rainbow Creek would be a violation of the waiver conditions. The Regional Board may terminate the applicability of waivers and issue waste discharge requirements or take other appropriate enforcement action against any commercial nursery failing to comply with the waiver conditions.

The implementation of technology based controls is one strategy that commercial nurseries can implement that will reduce a point and non point source discharges that may impact Rainbow Creek. Commercial nurseries account for 368 acres in Rainbow Valley and play a significant role in the nutrient problem found in the Creek. However, agricultural fields (502 acres) and orchards (811 acres) also have a significant presence in the valley and cannot be overlooked as sources of nutrients. A watershed management approach which takes into account all major sources is needed to control the nutrient surface water problem.

Under the revised TMDL implementation plan, the Regional Board will adopt, in conjunction with an MAA or MOU with the County of San Diego, individual or general waivers or waste discharge requirements (WDRs) for NPS discharges in the Rainbow Creek watershed. The waivers or WDRs shall require NPS dischargers to either participate in the third party NPS program or, alternatively, submit individual pollution prevention plans that detail how they will comply with the waivers and WDRs. Alternatively, the Regional Board may adopt a discharge prohibition, which includes exceptions for those discharges that adequately participate in the proposed County of San Diego Nutrient Resource Management Plan program.

63. Comment Code: Technology-Based Controls

Agency ID: County of San Diego

Commenter: Gary Erbeck

Comment:

Take reasonable technology-based reductions in loadings from nurseries into account. The Regional Board should secure reasonable further reductions in loadings from commercial nurseries (by voluntary means or through regulation) and should observe the effects of those reductions on Rainbow Creek, before promulgating a TMDL to address biostimulatory impairment of Rainbow Creek. When TMDLs are promulgated, loads allocated to these nurseries should begin from their discharges after reasonable technology-based controls are in place.

Response:

The Regional Board has a legal obligation under the Clean Water Act to adopt a TMDL for all water bodies, such as Rainbow Creek, identified as not meeting water quality standards under Section 303(d) of the Act. The Regional Board has identified both point sources and nonpoint sources to be contributing to excessive nutrient concentrations in Rainbow Creek. The revised TMDL requires nutrient wasteload and load reductions from these sources.

The Regional Board agrees with the comment that implementation of appropriate management practices at all nurseries in the Rainbow Creek watershed may result in significant reductions in nitrogen and phosphorus concentrations in Rainbow Creek. The Regional Board has structured an adaptive implementation action plan in the revised Rainbow Creek TMDL that simultaneously makes progress towards achieving nutrient water quality objectives while relying on monitoring data to reduce uncertainty and fill data gaps as time progresses. This monitoring data can be used to revise and improve the TMDL wasteload and load allocations over time.

64. Comment Code: Water Quality Standards

Agency ID: County of San Diego

Commenter: Gary Erbeck

Comment:

The draft Staff Report does not explicitly consider that the Basin Plan water quality objective is not violated merely by accelerated or “excessive” growth of algae or emergent plants. The Basin Plan’s narrative objective is violated only if growth is so excessive it is a nuisance, or so excessive it adversely affects beneficial uses.

Response:

Regardless of the presence or absence of algae, nitrogen and phosphorus levels in Rainbow Creek are exceeding the Biostimulatory Substances water quality objective. The 0.1 mg/l goal for phosphorus stated in the Biostimulatory Substances water quality objective is the phosphorus water quality objective applicable to Rainbow Creek. Similarly the N:P ratio of 10:1 stated in the Biostimulatory Substances water quality objective serves as the basis for determining allowable concentrations of nitrogen in Rainbow Creek. Applying the the N:P ratio of 10:1 to a phosphorus water quality objective of 0.1 mg/l yields 1.0 mg/l total nitrogen as the applicable nitrogen water quality objective for Rainbow Creek.

Rainbow Creek waters routinely exceed the 1.0 mg TN/L and 0.1 mg TP/L Biostimulatory Substances water quality objectives of the Basin Plan. Rainbow Creek is listed on the State of California's 2002 Clean Water Act section 303(d) list as an impaired water body due to excessive nitrogen and total phosphorus concentrations. The Clean Water Act provides that the Regional Board must establish TMDLs for nitrogen and phosphorus designed to attain the applicable Biostimulatory Substances water quality objectives of 1.0 mg TN/L and 0.1 mg TP/L.

The Biostimulatory Substances water quality objective requires the use of 0.1 mg/l phosphorus and 1.0 mg/l nitrogen as water quality objectives unless scientific studies show that alternative site specific water quality objectives (SSOs) for nitrogen and phosphorus are appropriate for Rainbow Creek. The SSOs would need to (1) be based on sound scientific rationale; (2) protect the designated beneficial uses of Rainbow Creek waters; and (3) be adopted by the Regional Board in a Basin Plan amendment.

Monitoring data collected in 2000 support that nutrient concentrations in the Creek are at levels that can promote nuisance algal growth, which was observed at monitoring stations that had optimal conditions (e.g., low flow, available substrate, and adequate water temperatures).

65. Comment Code: Water Quality Standards

Agency ID: County of San Diego

Commenter: Gary Erbeck

Comment:

Any TMDL for biostimulatory substances in inland surface waters in San Diego must be based on the Basin Plan narrative standard as the applicable Water Quality Objective. The Regional Board's targets of 0.1 and 1.0 mg/L for total phosphorus and total nitrogen, respectively, should be properly identified as interim numeric targets, rather than as Water Quality Objectives. Basic studies should be completed in the near future to allow

replacement of these default values with numeric targets that reflect what is actually going on in Rainbow Creek.

Response:

The TMDL numeric targets are required by federal regulations to be based on the Basin Plan's existing water quality objective for Biostimulatory Substances [see 40 CFR 130.7(c)(1)].

The 0.1 mg/l goal for phosphorus stated in the Biostimulatory Substances water quality objective is the phosphorus water quality objective applicable to Rainbow Creek. Similarly the N:P ratio of 10:1 stated in the Biostimulatory Substances water quality objective serves as the basis for determining allowable concentrations of nitrogen in Rainbow Creek. Applying the the N:P ratio of 10:1 to a phosphorus water quality objective of 0.1 mg/l yields 1.0 mg/l total nitrogen as the applicable nitrogen water quality objective for Rainbow Creek.

The Biostimulatory Substances water quality objective requires the use of 0.1 mg/l phosphorus and 1.0 mg/l nitrogen as water quality objectives unless scientific studies show that alternative site specific water quality objectives (SSOs) for nitrogen and phosphorus are appropriate for Rainbow Creek. The SSOs would need to (1) be based on sound scientific rationale; (2) protect the designated beneficial uses of Rainbow Creek waters; and (3) be adopted by the Regional Board in a Basin Plan amendment. Dischargers or other interested parties would need to fund and initiate the scientific studies to develop the SSO. It is possible the studies could reveal the need for more stringent nutrient water quality objectives.

The Regional Board is currently participating in the development of new numeric nutrient water quality objectives in an effort underway in California by the USEPA Region IX Regional Technical Advisory Group (RTAG). USEPA's recommended water quality criteria for the subcoregion that includes Rainbow Creek are 0.5 mg N/L for total nitrogen and 0.03 mg P/L for total phosphorus. The RTAG group is currently working on developing alternative regional nutrient water quality criteria for the Southern and Central California due to the number of nutrient TMDLs being completed in this region. Basin Plan resources are assigned to continue participation in the RTAG effort over the next three years. Information on the National Nutrient Strategy, the status of the RTAG effort, and technical guidance can be found at <http://www.epa.gov/ost/standards/nutrient.html>.

If the RTAG effort results in a new nutrient water quality objective applicable to the southern California area, the Rainbow Creek TMDL will be revised in accordance with the procedures described in the draft Basin Plan amendment presented in Attachment A of the proposed Resolution 2004-0401.

Agency ID: County of San Diego

Commenter: Gary Erbeck

Comment:

In the Regional Board's response to this comment, “absolutely insupportable, bordering on the ridiculous” becomes merely “unfounded.” Staff’s more substantive response is essentially that the Basin Plan allows the use of a 0.1 mg/L target for P, and a ratio-based 1.0 mg/L target for N, when no data are available. (Response to Peer Review No. 1 Comments, page 1.) The Regional Board has chosen to respond to a stinging scientific objection by a designated peer reviewer by (1) softening the true force of that comment in their summary, and (2) by offering up a legal rather than a scientific response to the comment.

Response:

The Regional Board disagrees that paraphrasing the comment by using the word "unfounded" softens “the true force of that comment.” The use of the word "unfounded" was intended to be consistent with the comment “absolutely insupportable.” The Regional Board did leave out the commentor’s phrase “bordering on the ridiculous” simply because it did not add any useful information beyond “absolutely insupportable” and “unfounded.”

The Regional Board is required by law to base the TMDLs on the Basin Plan's existing water quality objective for Biostimulatory Substances [40 CFR 130.7(c)(1)].

The Biostimulatory Substances water quality objective requires the use of 0.1 mg/l phosphorus and 1.0 mg/l nitrogen as water quality objectives unless scientific studies show that alternative site specific water quality objectives (SSOs) for nitrogen and phosphorus are appropriate for Rainbow Creek. The SSOs would need to (1) be based on sound scientific rationale; (2) protect the designated beneficial uses of Rainbow Creek waters; and (3) be adopted by the Regional Board in a Basin Plan amendment. Dischargers or other interested parties would need to fund and initiate the scientific studies to develop the SSO. It is possible the studies could reveal the need for more stringent nutrient water quality objectives.

The Regional Board has revised Section 2.4 to include supporting information regarding the use of the 10:1 nitrogen to phosphorus ratio as a translator and the appropriateness of the Basin Plan objectives for total nitrogen and total phosphorus based on comparisons with the USEPA's recommended nutrient criteria and published scientific studies.

67. Comment Code: Water Quality Standards

Agency ID: Hines Nurseries

Commenter: Bud Summers

Comment:

The initial target should be the drinking water standard, for which there is a more solid scientific basis. At a specified review date, numeric biostimulatory criteria could be added, if required.

Response:

TMDLs are required to be established at levels necessary to attain and maintain the applicable water quality standards for all pollutants preventing such attainment [40 CFR 130.7(c)(1)]. By law, the Rainbow Creek nutrient TMDLs must be based on the Basin Plan's existing water quality objective for Biostimulatory Substances.

68. Comment Code: Water Quality Standards

Agency ID: Hines Nurseries

Commenter: Bud Summers

Comment:

If the stated or inferred desired goals taken from the explanation of the narrative water quality objective in the Basin plan for biostimulatory substances are to be used as numeric targets for the nutrient TMDLs, another part of the explanatory material should also be included. The TMDL should specify that the defined "values are not to be exceeded more than 10% of the time unless studies of [Rainbow Creek] clearly show that water quality objective changes are permissible and changes are approved by the Regional Board." This would be consistent with the Basin Plan and provide the needed flexibility in the proposed TMDLs.

Response:

The reference to "values are not to be exceeded more than 10 percent of the time..." refers to the water quality of Rainbow Creek. The success of this TMDL will be judged on the basis of Rainbow Creek meeting the Water Quality Objectives for Biostimulatory Substances 90 percent of the time in the receiving waters.

69. Comment Code: Water Quality Standards

Agency ID: County of San Diego

Commenter: Gary Erbeck

Comment:

The Regional Board is incorrect on the application of the law. The “apparent” or “desired goal” for phosphorus that staff would rely on was not identified during the Basin Plan amendment process as a numerical Water Quality Objective, for informed public comment and Regional Board adoption. It is therefore not a Water Quality Objective, but is only what the Basin Plan says it is: a number that appears to be a desirable goal. Similarly, the limit of 1.0 mg/L total nitrogen that staff derive by applying a 10:1 ratio to this apparent desirable goal is also not legally a Water Quality Objective, or even an identified “desired goal.” It is a default in the absence of any data. The Regional Board should be gathering the data to avoid a resort to such defaults, rather than proclaiming default values to be Water Quality Objectives that should drive the TMDL development process.

Response:

The Regional Board has relied on, interpreted and used the 0.1 mg/l goal for phosphorus stated in the Biostimulatory Substances water quality objective as a phosphorus water quality objective for approximately 30 years since its original incorporation in the Basin Plan in 1975. Similarly the Regional Board’s use of the N:P ratio of 10:1 in the Biostimulatory Substances water quality objective to determine the applicable nitrogen water quality objective of 1.0 mg/l is well established. The Regional Board most recently reaffirmed its use of the the Biostimulatory Substances water quality objective to control nitrogen and phosphorus levels in San Diego Region inland surface waters by readopting it in 1994 as part of a major revamping of the Basin Plan.

The Biostimulatory Substances water quality objective requires the use of 0.1 mg/l phosphorus and 1.0 mg/l nitrogen as water quality objectives unless scientific studies show that alternative site specific water quality objectives (SSOs) for nitrogen and phosphorus are appropriate for Rainbow Creek. The SSOs would need to (1) be based on sound scientific rationale; (2) protect the designated beneficial uses of Rainbow Creek waters; and (3) be adopted by the Regional Board in a Basin Plan amendment. Dischargers or other interested parties would need to fund and initiate the scientific studies to develop the SSO. It is possible the studies could reveal the need for more stringent nutrient water quality objectives.

Further research into the appropriateness of the Basin Plan objectives for total nitrogen and total phosphorus shows that the numeric goals of 1.0 mg N/L and 0.1 mg P/L are consistent with published scientific studies. Dodds et al. (1998), using the cumulative frequency distributions of nutrient data from more than 1000 temperate streams primarily

in North America and New Zealand, suggest total nitrogen and total phosphorus levels between 0.7 to 1.5 mg N/L and 0.02 to 0.07 mg P/L, respectively, to define streams that are mesotrophic. Eutrophic is a trophic state that has an abundance of nutrients and plant growth, and mesotrophic is a trophic state that has moderate concentrations of nutrients and plant growth.

In another paper, Dodds and Welch (2000) reviewed studies for the purpose of defining potential nutrient criteria that would address the concern of eutrophication. One study showed that total nitrogen should remain below 3 mg N/L and total phosphorus below 0.4 mg P/L for benthic chlorophyll to remain below a target level of 200 mg/m² (below what is considered to be not aesthetically pleasing or have compromised recreational uses). Levels of 0.9 mg N/L and 0.04 mg P/L were recommended based on the above referenced study using cumulative frequency distributions of nutrients. Another study found that total nitrogen should be 0.47 mg N/L and total phosphorus be 0.06 mg P/L to ensure that chlorophyll is less than 100 mg/m² most of the time.

The Regional Board is currently participating in the development of new numeric nutrient water quality objectives in an effort underway in California by the USEPA Region IX Regional Technical Advisory Group (RTAG). USEPA's recommended water quality criteria for the subcoregion that includes Rainbow Creek are 0.5 mg N/L for total nitrogen and 0.03 mg P/L for total phosphorus. The RTAG group is currently working on developing alternative regional nutrient water quality criteria for the Southern and Central California due to the number of nutrient TMDLs being completed in this region. Basin Plan resources are assigned to continue participation in the RTAG effort over the next three years. Information on the National Nutrient Strategy, the status of the RTAG effort, and technical guidance can be found at <http://www.epa.gov/ost/standards/nutrient.html>.

70. Comment Code: Water Quality Standards

Agency ID: County of San Diego

Commenter: Gary Erbeck

Comment:

Respect the Basin Plan. The Regional Board's numeric targets for total nitrogen and total phosphorus should not be characterized anywhere in the Resolution, Basin Plan Amendment, or Staff Report as Water Quality Objectives. Only the narrative standard for biostimulatory substances actually established by the Basin Plan, after clear public notice and an opportunity to comment, has this status.

Response:

The Regional Board has relied on, interpreted and used the 0.1 mg/l goal for phosphorus stated in the Biostimulatory Substances water quality objective as a phosphorus water quality objective for approximately 30 years since its original incorporation in the Baisn Plan in 1975. Similarly the Regional Board's use of the N:P ratio of 10:1 in the Biostimulatory Substances water quality objective to determine the applicable nitrogen water quality objective of 1.0 mg/l is well established. The Regional Board most recently reaffirmed its use of the the Biostimulatory Substances water quality objective to control nitrogen and phosphorus levels in San Diego Region inland surface waters by readopting it in 1994 as part of a major revamping of the Baisn Plan.

The Biostimulatory Substances water quality objective requires the use of 0.1 mg/l phosphorus and 1.0 mg/l nitrogen as water quality objectives unless scientific studies show that alternative site specific water quality objectives (SSOs) for nitrogen and phosphorus are appropriate for Rainbow Creek. The SSOs would need to (1) be based on sound scientific rationale; (2) protect the designated beneficial uses of Rainbow Creek waters; and (3) be adopted by the Regional Board in a Basin Plan amendment. Dischargers or other interested parties would need to fund and initiate the scientific studies to develop the SSO. It is possible the studies could reveal the need for more stringent nutrient water quality objectives.

71. Comment Code: Water Quality Standards

Agency ID: Hines Nurseries

Commenter: Bud Summers

Comment:

The Staff Report then proceeds to assert a numeric objective of 1.0 mgN/L for total nitrogen and 0.1 mg P/L for total phosphorus, in part based on the fact that “data are lacking,” and that the objective allows for the use of a weight to weight ratio. Yet, no data or analysis is included in the Staff Report to support the translation of the narrative objective “to the numeric objectives,” i.e., there has been no translator established to translate the narrative objective that inland surface waters shall not contain biostimulatory substances that promote aquatic growth which “cause nuisance or adversely affect beneficial uses,” into the numeric objectives of 1.0 mg N/L and 0.1 mgP/L for total nitrogen and total phosphorus, respectively. In fact, at one point the Staff Report provides that: “currently, no site-specific data are available that correlates in-stream nutrient concentrations with abundance of algae.” (TMDL, p. 12.). In effect, no “translator” has been developed for the TMDL to translate the narrative objective of not causing a nuisance or adversely affecting beneficial uses, into the 1.0 mg N/L and 0.1 mgP/L numeric objectives.

Response:

The TMDL targets are required by federal regulation to be based on the Basin Plan's existing water quality objective for Biostimulatory Substances.[see 40 CFR 130.7(c)(1)].

The 0.1 mg/l goal for phosphorus stated in the Biostimulatory Substances water quality objective is the phosphorus water quality objective applicable to Rainbow Creek. Similarly the N:P ratio of 10:1 stated in the Biostimulatory Substances water quality objective serves as the basis for determining allowable concentrations of nitrogen in Rainbow Creek. Applying the the N:P ratio of 10:1 to a phosphorus water quality objective of 0.1 mg/l yields 1.0 mg/l total nitrogen as the applicable nitrogen water quality objective for Rainbow Creek.

The Biostimulatory Substances water quality objective requires the use of 0.1 mg/l phosphorus and 1.0 mg/l nitrogen as water quality objectives unless scientific studies show that alternative site specific water quality objectives (SSOs) for nitrogen and phosphorus are appropriate for Rainbow Creek. The SSOs would need to (1) be based on sound scientific rationale; (2) protect the designated beneficial uses of Rainbow Creek waters; and (3) be adopted by the Regional Board in a Basin Plan amendment. Dischargers or other interested parties would need to fund and initiate the scientific studies to develop the SSO. It is possible the studies could reveal the need for more stringent nutrient water quality objectives.

Further research into the appropriateness of the Basin Plan objectives for total nitrogen and total phosphorus supported that the numeric goals of 1.0 mg N/L and 0.1 mg P/L are consistent with published scientific studies. Dodds et al. (1998), using the cumulative frequency distributions of nutrient data from more than 1000 temperate streams primarily in North America and New Zealand, suggest total nitrogen and total phosphorus levels between 0.7 to 1.5 mg N/L and 0.02 to 0.07 mg P/L, respectively, define streams that are mesotrophic. Eutrophic is a trophic state that has an abundance of nutrients and plant growth, and mesotrophic is a trophic state that has moderate concentrations of nutrients and plant growth.

72. Comment Code: Water Quality Standards

Agency ID: County of San Diego

Commenter: Gary Erbeck

Comment:

The scientific basis for both of these targets is weak. Dr. David Jenkins of U.C. Berkeley, one of the Regional Board's peer reviewers for the draft staff report, addressed these targets as follows: "An arbitrary assumption that the P limit should be one-tenth of the N limit is absolutely insupportable, bordering on the ridiculous! Reductions in P and further reductions in NO₃-N must be justified on the basis of determining which limits

algal growth in the Creek.” (Attachment F-3 of the Staff Report dated March 22, 2002, page 1 of transmittal letter.)

Response:

The Regional Board has relied on, interpreted and used the 0.1 mg/l goal for phosphorus stated in the Biostimulatory Substances water quality objective as a phosphorus water quality objective for approximately 30 years since its original incorporation in the Basin Plan in 1975. Similarly the Regional Board’s use of the N:P ratio of 10:1 in the Biostimulatory Substances water quality objective to determine the applicable nitrogen water quality objective of 1.0 mg/l is well established. The Regional Board most recently reaffirmed its use of the the Biostimulatory Substances water quality objective to control nitrogen and phosphorus levels in San Diego Region inland surface waters by readopting it in 1994 as part of a major revamping of the Basin Plan.

The Biostimulatory Substances water quality objective requires the use of 0.1 mg/l phosphorus and 1.0 mg/l nitrogen as water quality objectives unless scientific studies show that alternative site specific water quality objectives (SSOs) for nitrogen and phosphorus are appropriate for Rainbow Creek. The SSOs would need to (1) be based on sound scientific rationale; (2) protect the designated beneficial uses of Rainbow Creek waters; and (3) be adopted by the Regional Board in a Basin Plan amendment. Dischargers or other interested parties would need to fund and initiate the scientific studies to develop the SSO. It is possible the studies could reveal the need for more stringent nutrient water quality objectives.

Further research into the appropriateness of the Basin Plan objectives for total nitrogen and total phosphorus supported that the numeric goals of 1.0 mg TN/L and 0.1 mg TP/L are consistent with published scientific studies. Dodds et al. (1998), using the cumulative frequency distributions of nutrient data from more than 1000 temperate streams primarily in North America and New Zealand, suggest total nitrogen and total phosphorus levels between 0.7 to 1.5 mg TN/L and 0.02 to 0.07 mg TP/L, respectively, define streams that are mesotrophic. Where eutrophic is a trophic state that has an abundance of nutrients and plant growth, mesotrophic is a trophic state that has moderate concentrations of nutrients and plant growth.

In another paper, Dodds and Welch (2000) reviewed studies for the purpose of defining potential nutrient criteria that would address the concern of eutrophication. One study showed that total nitrogen should remain below 3 mg/L and total phosphorus below 0.4 mg/L for benthic chlorophyll to remain below a target level of 200 mg/m² (below what is considered to be not aesthetically pleasing or have compromised recreational uses). Levels of 0.9 mg TN/L and 0.04 mg TP/L were recommended based on the above referenced study using cumulative frequency distributions of nutrients. Another study found that total nitrogen should be 0.47 mg TN/L and total phosphorus 0.06 mg TP/L to ensure that chlorophyll is less than 100 mg/m² most of the time.

The Regional Board is currently participating in the development of new numeric nutrient water quality objectives in an effort underway in California by the USEPA Region IX Regional Technical Advisory Group (RTAG). USEPA's recommended water quality criteria for the subcoregion that includes Rainbow Creek are 0.5 mg N/L for total nitrogen and 0.03 mg P/L for total phosphorus. The RTAG group is currently working on developing alternative regional nutrient water quality criteria for the Southern and Central California due to the number of nutrient TMDLs being completed in this region. Basin Plan resources are assigned to continue participation in the RTAG effort over the next three years. Information on the National Nutrient Strategy, the status of the RTAG effort, and technical guidance can be found at <http://www.epa.gov/ost/standards/nutrient.html>.

73. Comment Code: Water Quality Standards

Agency ID: County of San Diego

Commenter: Gary Erbeck

Comment:

A principle reason that the Regional Board has not made a convincing scientific case for impairment by biostimulatory substances may be that it misconstrues the Basin Plan as also setting numerical Water Quality Objectives for N and P. The Basin Plan states that "a desired goal for total phosphorus appears to be 0.1 mg/L total phosphorus." The Regional Board would style this as creating a Water Quality Objective. While the Regional Board admits that no "analogous threshold value" for nitrogen is set in the Basin Plan (Staff Report at p.7), it nevertheless derives a limit of 1.0 mg/L for nitrogen from a discussion in the Basin Plan of natural ratios of nitrogen to phosphorus (N:P) that should be used as default values in the absence of any water-body-specific data. The Regional Board characterizes even this constructed number, which is derived from rather than called out in the Basin Plan, as a "Water Quality Objective." (Draft Staff Report p.6, and draft Resolution p.1, Finding No. 5).

Response:

The Regional Board has relied on, interpreted and used the 0.1 mg/l goal for phosphorus stated in the Biostimulatory Substances water quality objective as a phosphorus water quality objective for approximately 30 years since its original incorporation in the Basin Plan in 1975. Similarly the Regional Board's use of the N:P ratio of 10:1 in the Biostimulatory Substances water quality objective to determine the applicable nitrogen water quality objective of 1.0 mg/l is well established. The Regional Board most recently reaffirmed its use of the the Biostimulatory Substances water quality objective to control nitrogen and phosphorus levels in San Diego Region inland surface waters by readopting it in 1994 as part of a major revamping of the Basin Plan.

The Biostimulatory Substances water quality objective requires the use of 0.1 mg/l phosphorus and 1.0 mg/l nitrogen as water quality objectives unless scientific studies show that alternative site specific water quality objectives (SSOs) for nitrogen and phosphorus are appropriate for Rainbow Creek. The SSOs would need to (1) be based on sound scientific rationale; (2) protect the designated beneficial uses of Rainbow Creek waters; and (3) be adopted by the Regional Board in a Basin Plan amendment. Dischargers or other interested parties would need to fund and initiate the scientific studies to develop the SSO. It is possible the studies could reveal the need for more stringent nutrient water quality objectives.

The Regional Board is currently participating in the development of new numeric nutrient water quality objectives in an effort underway in California by the USEPA Region IX Regional Technical Advisory Group (RTAG). USEPA's recommended water quality criteria for the subcoregion that includes Rainbow Creek are 0.5 mg N/L for total nitrogen and 0.03 mg P/L for total phosphorus. The RTAG group is currently working on developing alternative regional nutrient water quality criteria for the Southern and Central California due to the number of nutrient TMDLs being completed in this region. Basin Plan resources are assigned to continue participation in the RTAG effort over the next three years. Information on the National Nutrient Strategy, the status of the RTAG effort, and technical guidance can be found at <http://www.epa.gov/ost/standards/nutrient.html>.

Literature Cited

Dodds, W. K., J. R. Jones, and E. B. Welch, 1998. Suggested Classification of Stream Trophic State: Distributions of Temperate Stream Types by Chlorophyll, Total Nitrogen, and Phosphorus. *Water Research, Journal of the International Water Association*, Volume 32:5, pp. 1455-1462.

Dodds, W. K., and E. B. Welch, 2000. Establishing Nutrient Criteria in Streams. *Journal of North American Benthological Society*, Volume 19:1, pp. 186-196.